

# **ASTRONOMY AND ASTROPHYSICS**

**A European Journal**

**Author-Title and Subject Indexes 1989**

**pp. 429–576**

**(including the "Thesaurus of key words", pp. 471–473)**

**Main Journal: Vols. 208–226**

**Supplement Series: Vols. 77–81**

# Astronomy and Astrophysics

A European Journal

## Board of Directors

Chairman: G. Contopoulos  
(Greece)

Vice Chairman: G. Setti  
(Italy)

D. Alloin  
(France)

R. Canal  
(Spain)

H. Haupt  
(Austria)

A. G. Hearn  
(The Netherlands)

A. Maeder  
(Switzerland)

K. Mattila  
(Finland)

P. G. Mezger  
(Germany, Federal Republic)

P. E. Nissen  
(Denmark)

Aa. Sandqvist  
(Sweden)

E. Schatzman  
(France)

E. H. Schröter  
(Germany, Federal Republic)

P. Smeyers  
(Belgium)

H. van der Laan  
(ESO)

## Editors-in-Chief

J. Lequeux  
Astronomy and Astrophysics  
Editorial Office  
Observatoire de Meudon  
92 195 Meudon Principal Cedex  
(France)  
Tel. (31-1) 45-07-06-30  
Telex (42) 270912 obsastr

E-Mail:  
EARN AANDA @ FRMEU 51  
SPAN MESIOA::AANDA

M. Grewing  
Astronomy and Astrophysics  
Editorial Office  
c/o Astronomisches Institut  
Waldhäuserstrasse 64  
7400 Tübingen  
(Fed. Rep. of Germany)  
Tel. (49-7071) 294982  
Telefax (49-07071) 293458  
Telex (41) 7262714 ait d  
E-Mail:  
DatexP 0262-45707130039  
SPAN AITMVX::AAPTUE

## Letter-Editor

S. R. Pottasch  
Kapteyn Astronomical Institute  
P. O. Box 800  
9700 AV Groningen  
(The Netherlands)  
Tel. (31-50) 634093  
Telex (44) 53572 stars nl  
Telefax (31-50) 634033

## Editing Secretaries

Miss B. Perche  
Mrs. M. Rougeot

Mrs. U. Hilkes

Mrs. B. J. Boersma-Reed

The exclusive copyright © for all languages and countries, including the right for photomechanical and any other reproduction, also in microform, is vested in European Southern Observatory (ESO).

The use of registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Springer International 1989

Printed in Germany

Printers: Brühlsche Universitätsdruckerei, Giessen



## Annual Author-Title Index

## Astronomy and Astrophysics, Volumes 208-226 (1989)

## Supplement Series, Volumes 77-81 (1989)

Volume and page numbers of articles published in the Supplement Series are printed in *italics*

- Aaquist, O.B., Kwok, S.: Bipolar radio morphology in the compact nebula K 3-35 **222**, 227
- Abbott, D.C., see Kudritzki, R.P., et al. **219**, 205
- Abergel, A., see Dimarellis, E., et al. **208**, 327
- Abgrall, H., Roueff, E.: Wavelengths, oscillator strengths and transition probabilities of the H<sub>2</sub> molecule for Lyman and Werner systems **223**, 378 (79, 313)
- Abhyankar, K.D., see Vyas, M.L. **226**, 415 (81, 67)
- Abhyankar, K.D., see Vyas, M.L. **226**, 415 (81, 81)
- Abuladze, O.P., see Alania, I.F., et al. **215**, 411 (77, 333)
- Achterberg, A.: Synchrotron-cooling-included fine structure in extragalactic radio sources **221**, 364
- Acker, A., Köppen, J., Stenholm, B., Jasiewicz, G.: Spectrophotometry of southern planetary nebulae. I. Plasma diagnostics **224**, 363 (80, 201)
- Acker, A., Prévot, M.-L., Prévot, L.: Spectroscopic variations of the V 444 Cyg system **226**, 137
- Acker, A., see Gleizes, F., et al. **222**, 237
- Acker, A., see Pottasch, S.R. **221**, 123
- Acker, A., see Preite-Martinez, A., et al. **226**, 421 (81, 309)
- Acker, A., see Tyndra, R., et al. **213**, 520 (77, 39)
- Acker, A., Stenholm, B., Tyndra, R.: The absolute H $\beta$  fluxes for southern planetary nebulae **217**, 394 (77, 487)
- Adams, N.G., Smith, D., Giles, K., Herbst, E.: The production of C<sub>n</sub>O, HC<sub>n</sub>O, and H<sub>2</sub>C<sub>n</sub>O molecules in dense interstellar clouds **220**, 269
- Adam, G., Bacon, R., Courtès, G., Georgelin, Y., Monnet, G., Pécontal, E.: Observations of the Einstein Cross 2237+030 with the TIGER Integral Field Spectrograph **208**, L15
- Adam, J., Störzer, H., Duschl, W.J.: Theoretical aspects of two  $\alpha$ -distributions in accretion disks **218**, 205
- Adelman, S.J., Pyper, D.M., Shore, S.N., White, R.E., Warren, Jr., W.H.: A catalog of stellar spectrophotometry **226**, 418 (81, 221)
- Adelman, S.J., Svatek, G.F., Van Winkler, K., Warren Jr., W.H.: A multiplet table for Mn I **224**, 365 (80, 285)
- Afanasiev, V.L., Sil'chenko, O.K., Zasov, A.V.: Large angular rotation velocity of the central parts of some spiral galaxies **213**, L9
- Aguiar, O., see Amaldi, E., et al. **216**, 325
- Aiello, S., see Barsella, B., et al. **209**, 349
- Aime, C., see Druesne, P., et al. **217**, 229
- Akujor, C.E., Noshi, M.N., Kazès, I.: Meter wavelength structures, flux densities and accurate positions of weak radio sources **224**, 363 (80, 215)
- Alania, I.F., Abuladze, O.P., West, R.M.: *uvby* $\beta$  photometry of peculiar B and A stars, discovered at Abastumani **215**, 411 (77, 333)
- Alberdi, A., see Marcaide, J.M., et al. **211**, L23
- Alberdi, A., see Quirrenbach, A., et al. **226**, L1
- Alcaino, G., Liller, W., Alvarado, F.: *BVR*I CCD photometry of the globular cluster NGC 3201 **216**, 68
- Alcolea, J., Bujarrabal, V., Gallego, J.D.:  $v=3$ ,  $J=1-0$  SiO maser emission from evolved stars **211**, 187
- Alcolea, J., see Barcia, A., et al. **215**, L9
- Alcolea, J., see Fuente, A., et al. **223**, 321
- Alfaro, E.J., see Delgado, A.J. **219**, 121
- Allan, P.M., see Meaburn, J., et al. **208**, 17
- Alloin, D., Bica, E.: A comparative study of Na I and Ca II infrared lines in stars, star clusters and galaxy nuclei: an alternative to the dwarf-enriched population **217**, 57
- Alloin, D., see Bonatto, C., et al. **226**, 23
- Almleaky, Y.M., Brown, J.C., Sweet, P.A.: Density diagnostic and inhomogeneous plasmas. I. Isothermal plasmas **224**, 328
- Altenhoff, W.J., Huchtmeier, W.K., Kreysa, E., Schmidt, J., Schraml, J.B., Thum, C.: Radio continuum observations of comet P/Halley at 250 GHz **222**, 323
- Alvarado, F., see Alcaino, G., et al. **216**, 68
- Alvarez, H., Aparici, J., May, J.: The Small Magellanic Cloud observed at 45 MHz **213**, 13
- Aly, J.J., Amari, T.: Current sheets in two-dimensional potential magnetic fields. I. General properties **221**, 287
- Aly, J.J., see Amari, T. **208**, 261
- Aly, J.J., see Amari, T. **208**, 361
- Amaldi, E., Aguiar, O., Bassan, M., Bonifazi, P., Carelli, P., Castellano, M.G., Cavallari, G., Coccia, E., Cosmelli, C., Fairbank, W.M., Frasca, S., Foglietti, V., Habel, R., Hamilton, W.O., Henderson, J., Johnson, W., Lane, K.R., Mann, A.G., McAshan, M.S., Michelson, P.F., Modena, I., Pallottino, G.V., Pizzella, G., Price, J.C., Rapagnani, R., Ricci, F., Solomonson, N., Stevenson, T.R., Taber, R.C., Xu, B.X.: First gravity wave coincidence experiment between resonant cryogenic detectors: Louisiana-Rome-Stanford **216**, 325
- Amari, T., Aly, J.J.: Interaction between a line current and a two-dimensional constant- $\alpha$  force-free field: an analytical model for quiescent prominences **208**, 261
- Amari, T., Aly, J.J.: Two-dimensional isothermal magnetostatic equilibria in a gravitational field. I. Unsheared equilibria **208**, 361
- Amari, T., see Aly, J.J. **221**, 287
- Ambruster, C.W., Pettersen, B.R., Sundland, S.R.: High resolution IUE observations of the flare star AD Leonis: implications for the Mg II Wilson-Bappu effect **208**, 198
- Ambruster, C.W., see Vilhu, O., et al. **222**, 179
- Amer, M.A., see Youssef, N.H. **220**, 281
- Amoretti, M., Badiali, M., Preite-Martinez, A.: Three-reflection telescopes: two-mirror aplanatic solutions **211**, 250
- Amram, P., Marcelin, M., Boulesteix, J., Le Coarer, E.: The detailed velocity field of the ionized gas in the interacting pair of galaxies NGC 2535-36 **226**, 415 (81, 59)
- Andersen, J., Clausen, J.V.: Absolute dimensions of eclipsing binaries. XV. EM Carinae **213**, 183
- Andersen, J., Clausen, J.V., Magain, P.: Absolute dimensions of eclipsing binaries. XIV. UX Mensae **211**, 346
- Andersen, J., Lindgren, H., Hazen, M.L., Mayor, M.: The pre-main-sequence binary system AK Scorpii **219**, 142
- Andersen, J., Pavlovski, K., Pirola, V.: Fundamental parameters for the W Serpentis stars. II. RX Cassiopeiae **215**, 272
- Andersen, J., see Clausen, J.V., et al. **226**, 418 (81, 197)
- Andersen, J., see Imbert, M., et al. **226**, 421 (81, 339)
- Andersen, J., see Mermilliod, J.-C., et al. **220**, 341 (79, 11)
- Andersen, J., see Tjin A Djie, H.R.E., et al. **218**, 338 (78, 1)

- Andrade, A.A., Friedjung, M.: Continuum emission of novae **224**, 187
- Andrews, A.D.: Investigation of micro-flaring and secular and quasi-periodic variations in dMe flare stars. I. Suspected ultra-short "waves" in the dM2-3e star V1285 Aquilae **210**, 303
- Andrews, A.D.: Investigation of micro-flaring and secular and quasi-periodic variations in the dMe flare stars. II. "Time signatures" of micro-variability in V 1285 Aquilae, V 645 Centauri, V 1054 Ophiuchi and AU Microscopii **214**, 220
- Andrews, A.D., see Linsky, J.L., et al. **211**, 173
- Andrillat, Y., see Jaschek, M., et al. **218**, 180
- Andrillat, Y., see Vreux, J.M., et al. **226**, 421 (**81**, 353)
- Antonello, E., see Mantegazza, L., et al. **208**, 91
- Anton, V., see Ferriz-Mas, A., et al. **210**, 425
- Anttila, R., see Liljeström, T., et al. **220**, 342 (**79**, 19)
- Anzer, U., see Démoulin, P., et al. **221**, 326
- Anzer, U., see Sawada, K., et al. **221**, 263
- Aparici, J., see Alvarez, H., et al. **213**, 13
- Appenzeller, I., see Stahl, O., et al. **221**, 321
- Appenzeller, I., see Wagner, S.J. **225**, L13
- Appenzeller, I., Wagner, S.J.: Emission-line profiles of two T Tauri stars with weak non-photospheric continua **225**, 432
- Appl, S., see Lesch, H., et al. **225**, 341
- Appourchaux, T.: Optimization of parameters for helioseismology experiments measuring solar radial velocities **222**, 361
- Arcoragi, J.-P., see Langer, N., et al. **210**, 187
- Ardeberg, A., see Imbert, M., et al. **226**, 421 (**81**, 339)
- Ardeberg, A., see Lindgren, H., et al. **218**, 111
- Arellano Ferro, A., Giridhar, S., Chavez, M., Parrao, L.: A photometric study of F-type stars of high galactic latitude **214**, 123
- Arens, M., see Thé, P.S., et al. **226**, 415 (**81**, 115)
- Arimoto, N., Bica, E.: Rapid changes in the integrated light of young star clusters **222**, 89
- Arimoto, N., see Yoshii, Y. **224**, 361
- Arimoto, N., Yoshii, Y.: *Erratum*: Chemical and photometric properties of a galactic wind model for elliptical galaxies **224**, 361
- Arlot, J.E., Thuillot, W., D'Ambrosio, V.: An analysis of the observations of the mutual events of the Galilean satellites of Jupiter made in 1985 at the Observatoire de Haute Provence **213**, 479
- Arlot, J.-E., Rocher, P.: Visibility of Io's occultations in 1991 **223**, 381 (**80**, 1)
- Armstrong, J.T., Winnewisser, G.: An extended outflow in L 673 **210**, 373
- Arnault, Ph., Kunth, D., Schild, H.: Observed and synthesized populations of Wolf-Rayet stars: their evolution and the influence of metallicity **224**, 73
- Arnould, M., see Jorissen, A. **221**, 161
- Arnould, M., see Langer, N., et al. **210**, 187
- Arribas, S., Crivellari, L.: A spectroscopic analysis of the G 8 V star  $\tau$  Ceti **210**, 211
- Arribas, S., Martinez Roger, C.: An empirical colour- $T_{\text{eff}}$  calibration for G and K dwarf and subdwarf stars **215**, 305
- Arribas, S., see Booth, A.J., et al. **218**, 167
- Arsenault, R.: The preponderance of bar and ring features in starburst galaxies and active galactic nuclei **217**, 66
- Artu, M.-C., Borsenberger, J., Lanz, T.: The IUE spectral atlas of two normal B stars:  $\pi$  Ceti and  $\nu$  Capricorni (125-198 nm) **223**, 381 (**80**, 17)
- Aslan, Z., Aydın, C., Tunca, Z., Demircan, O., Derman, E., Gölbasi, O., Marşoğlu, A.: Site testing for an optical observatory in Turkey **208**, 385
- Aspin, C., McLean, I.S., Schwarz, H.E., McCaughrean, M.J.: CCD observations of bipolar nebulae. IV. S 106 **221**, 100
- Athanassoula, E., see Colin, J. **214**, 99
- Atoyan, A.M., Nahapetian, A.: Active galactic nuclei as accreting turbulent synchrotron-self-Compton sources **219**, 53
- Augarde, R., see Casoli, F., et al. **224**, 31
- Aurière, M., Koch-Miramond, L., Ortolani, S.: The X-ray source in the core of 47 Tucanae **214**, 113
- Aurière, M., Ortolani, S.: NGC 6752: a globular cluster with a resolved post-collapse core? **221**, 20
- Aurière, M., see Geffert, M., et al. **209**, 423
- Auvergne, M., see Vauclair, G., et al. **215**, L17
- Avgoloupis, S.I., see Mavridis, L.N., et al. **224**, 365 (**80**, 279)
- Avgoloupis, S., see de Jager, C., et al. **211**, 157
- Axford, W.I., see Lieu, R., et al. **208**, 351
- Aydın, C., see Aslan, Z., et al. **208**, 385
- Azcárate, I.N., see Cersosimo, J.C., et al. **208**, 239
- Baade, D.: A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. I. Observations and measurements **223**, 380 (**79**, 423)
- Baade, D.: A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. II. Results and discussion **222**, 200
- Baade, D., Stahl, O.: New aspects of the variability of the probable pre-main sequence star HR 5999 **209**, 255
- Baade, D., Stahl, O.: Rapid line profile-variability of the A-type shell- and possible pre-main sequence star HD 163296 **209**, 268
- Baas, F., see Geballe, T.R., et al. **208**, 255
- Baas, F., see Grim, R.J.A., et al. **218**, 341 (**78**, 161)
- Babel, J., Burki, G., Mayor, M., Waelkens, C., Chmielewski, Y.: W Sagittarii: pulsation and orbit **216**, 125
- Bachiller, R., Bujarrabal, V., Martín-Pintado, J., Gómez-González, J.: Carbon monoxide emission from the Ring Nebula in Lyra **218**, 252
- Bachiller, R., Planesas, P., Martín-Pintado, J., Bujarrabal, V., Tafalla, M.: The structure of the molecular gas in the young planetary nebula NGC 2346 **210**, 366
- Bachiller, R., see Martín-Pintado, J., et al. **215**, L13
- Bachiller, R., see Martín-Pintado, J., et al. **222**, L9
- Bacon, R., see Adam, G., et al. **208**, L15
- Badiali, M., see Amoretti, M., et al. **211**, 250
- Bässgen, M., Grewing, M.: Spectroscopic search for halos of planetary nebulae **218**, 273
- Baglin, A., see Vauclair, G., et al. **215**, L17
- Baize, P.: Orbital elements of twelve visual binary stars **218**, 339 (**78**, 125)
- Baize, P.: Orbital elements of eight interferometric binary stars **226**, 421 (**81**, 415)
- Baize, P., Petit, M.: Orbital double stars with variable components (text in French) **217**, 394 (**77**, 497)
- Bajaja, E., Cappa de Nicolau, C.E., Martín, M.C., Morras, R., Olano, C.A., Pöppel, W.G.L.: A survey of several southern high-velocity complexes **219**, 363 (**78**, 345)
- Bakker, P.R., see van Genderen, A.M., et al. **224**, 125
- Balian, R., Schaeffer, R.: Scale-invariant matter distribution in the universe. I. Counts in cells **220**, 1
- Balian, R., Schaeffer, R.: Scale-invariant matter distribution in the universe. II. Bifractal behaviour **226**, 373
- Balkowski, C., see van Driel, W., et al. **218**, 49

- Ballereau, D., Chauville, J.: Long-term and mid-term spectroscopic variations of the Be-shell star HD 184279 (V 1294 Aquilae). II. Towards a model **214**, 285
- Ballester, J.L., Priest, E.R.: Model for the fibril structure of solar prominences **225**, 213
- Ballet, J., Caplan, J., Rothenflug, R., Dubreuil, D., Soutoul, A.: Fabry-Perot observations of [FeX] and [FeXIV] in the Cygnus Loop **211**, 217
- Ballet, J., Luciani, J.F., Mora, P.: Suprathermal ionization in evaporating clouds. Non-local electron distribution function **218**, 292
- Ballet, J., Rothenflug, R.: The EXOSAT view of the north and east Cygnus Loop **218**, 277
- Balona, L.A., see Cuypers, J., et al. **226**, 418 (**81**, 151)
- Balthasar, H., see Wiehr, E. **208**, 303
- Balthasar, H., see Wöhl, H. **219**, 313
- Bandiera, R., see Salvati, M., et al. **208**, L5
- Baraffe, I., see Langer, N., et al. **224**, L17
- Baratta, G.A., Catalano, F.A., Leone, F., Strazzulla, G.: Post-perihelion photometry of comet Liller (1988a) at Catania (Italy) Observatory **219**, 322
- Baratta, G.B., see Viotti, R. **217**, 394 (**77**, 155)
- Barbanis, B., see Contopoulos, G. **222**, 329
- Barbieri, C., see Cristiani, S., et al. **215**, 409 (**77**, 161)
- Barbier-Brossat, M.: Catalogue de vitesses radiales moyennes stellaires (catalogue sur bande magnétique) **223**, 381 (**80**, 67)
- Barbon, R., Cappellaro, E., Turatto, M.: The Asiago Supernova Catalogue **226**, 421 (**81**, 421)
- Barbon, R., Ciatti, F., Iijima, T., Rosino, L.: Photographic and spectroscopic observations of three type Ia supernovae: 1982W, 1983R, and 1983U **214**, 131
- Barbon, R., Iijima, T., Rosino, L.: The supernova 1984A in NGC4419 **220**, 83
- Barbuy, B., Erdelyi-Mendes, M.: Oxygen in old and thick disk stars **214**, 239
- Barbuy, B., see Erdelyi-Mendes, M. **224**, 363 (**80**, 229)
- Barbuy, B., see Spite, M., et al. **222**, 35
- Barcia, A., Alcolea, J., Bujarrabal, V.: A new circumstellar maser:  $^{30}\text{SiO}$  **215**, L9
- Barcia, A., see Fuente, A., et al. **223**, 321
- Bardwell, C., see van Houten-Groeneveld, I., et al. **224**, 299
- Baring, M.G.: Synchrotron pair cascades in strong magnetic fields **225**, 260
- Barnett, E.W., see Greve, A., et al. **215**, 113
- Barone, F., see Milano, L., et al. **210**, 181
- Barone, P., Massaro, E., Polichetti, A.: The segmented Prony method for the analysis of non-stationary time series **209**, 435
- Barrera, L.H., Vogt, N.: A spectroscopic study of the dwarf nova CN Orionis **220**, 99
- Barrow, C.H., Desch, M.D.: Solar wind control of Jupiter's hectometric radio emission **213**, 495
- Barr, P., see Kaastra, J.S. **226**, 59
- Barsella, B., Ferrini, F., Greenberg, J.M., Aiello, S.: Large-scale behaviour of dust grains in a galactic environment **209**, 349
- Barucci, M.A., see Di Martino, M., et al. **223**, 352
- Barwig, H., see Hessman, F.V., et al. **213**, 167
- Barylak, M., see Doazan, V., et al. **210**, 249
- Barylak, M., see Wamsteker, W., et al. **220**, 341 (**79**, 1)
- Bassan, M., see Amaldi, E., et al. **216**, 325
- Bastian, T.S., see Güdel, M., et al. **220**, L5
- Batelaan, P.D., see Gulkis, S., et al. **213**, 465
- Baudrand, J., see Cuby, J.G., et al. **220**, 335
- Baudry, A., see Kömpe, C., et al. **221**, 295
- Baudu, J.P., see Chollet, F., et al. **226**, 418 (**81**, 285)
- Baureis, P., Ebert, R., Schmitz, F.: Solutions for the equilibrium of static isothermal gas clouds with poloidal magnetic fields **225**, 405
- Bazzano, A., see Greenhill, J.G., et al. **208**, L1
- Becker, R., Mebold, U., Reif, K., van Woerden, H.: Erratum: The H $\alpha$ -properties of bright southern galaxies **214**, 402
- Becker, R., Schilke, P., Henkel, C.: Molecular clouds in irregular galaxies. I. An ultramassive complex in NGC 3077? **211**, L19
- Becker, R., see Brand, J., et al. **211**, 315
- Becker, S.R., Butler, K.: Non-LTE line formation in early B and late O stars. IV. Singly ionized nitrogen **209**, 244
- Becker, S.R., Butler, K., Zeppen, C.J.: Improved M1 and E2 transition probabilities for forbidden lines in ions of the nitrogen isoelectronic sequence **221**, 375
- Beckmann, J.E., see Foing, B.H., et al. **224**, 362 (**80**, 189)
- Beckmann, J.E., see Rebolo, R., et al. **224**, 362 (**80**, 135)
- Beckman, J.E., see Cepa, J. **220**, 342 (**79**, 41)
- Beck, R., Loiseau, N., Hummel, E., Berkhuijsen, E.M., Gräve, R., Wielebinski, R.: High-resolution polarization observations of M31. I. Structure of the magnetic field in the southwestern arm **222**, 58
- Beck, R., see Harnett, J.I., et al. **208**, 32
- Beck, R., see Krause, M., et al. **217**, 17
- Beck, R., see Krause, M., et al. **217**, 4
- Beech, M., Mitalas, R.: The homogeneous evolution of massive stars **213**, 127
- Beer, H., Walter, G., Käppeler, F.: s-Process studies on tin **211**, 245
- Begeman, K.G.: H $\alpha$  rotation curves of spiral galaxies. I. NGC 3198 **223**, 47
- Bel, N., Lafon, J.-P.J., Viala, Y.P., Loireux, E.: On the electrostatic potential and charge of cosmic grains. III. Grains in diffuse and dense interstellar clouds **208**, 331
- Bel, N., Leroy, B.: Zeeman splitting in interstellar molecules **224**, 206
- Bell, C.R., see Belmonte, J.A., et al. **221**, 41
- Belmonte, J.A., Bell, C.R., Leeper, M., Pallé, P.L., Pietraszewski, K.A.R.B., Renton, R.E., Roca Cortés, T.: Search for radial velocity variations in rapidly oscillating Ap stars using the Fabry-Perot interferometric stellar oscillation spectrometer **221**, 41
- Belyakina, T.S., Bondar, N.I., Chochol, D., Chuvaev, K.K., Efimov, Y.S., Gershberg, R.E., Grygar, J., Hric, L., Krasnobabsev, V.I., Piirola, V., Poutanen, M., Savanov, I.S., Huovelin, J., Tuominen, I., Shakhovskaya, N.I., Shakhovskoy, N.M., Shevavrin, V.I., Shcherbakov, A.G.: The Kuwano-Honda's peculiar object (PU Vulpeculae) in 1983-1986 **223**, 119
- Ben Jaffel, L., Vidal-Madjar, A.: New developments in the discrete ordinate method for the resolution of the radiative transfer equation **220**, 306
- Benayoun, J.J., see Nercessian, E., et al. **210**, 225
- Bender, R., see Longo, G., et al. **225**, L17
- Bender, R., see Möllenhoff, C. **214**, 61
- Bender, R., see Nieto, J.-L. **215**, 266
- Bender, R., see Wagner, S.J., et al. **215**, 243
- Bender, R., Surma, P., Döbereiner, S., Möllenhoff, C., Madejsky, R.: Isophote shapes of elliptical galaxies. II. Correlations with global optical, radio and X-ray properties **217**, 35
- Benest, D.: Planetary orbits in the elliptic restricted problem. II. The Sirius system **223**, 361

- Bentolila, C., see Cayrel de Strobel, G. 211, 324
- Benvenuti, P., Porceddu, I.: Diffuse absorption bands and the 2175 Å feature: results from a sample of galactic stars 223, 329
- Benz, A.O., Güdel, M.: VLA detection of radio emission from a dwarf nova 218, 137
- Benz, A.O., see Güdel, M. 211, L5
- Benz, A.O., see Güdel, M., et al. 217, L9
- Benz, A.O., see Güdel, M., et al. 220, L5
- Ben-Jaffel, L., see McConnell, J.C., et al. 225, L9
- Berezinsky, V.S., Grigor'eva, S.I.: *Erratum*: A bump in the ultra-high energy cosmic ray spectrum 210, 462
- Berezinsky, V.S., Ptuskin, V.S.: Radiation from young SNII shells produced by cosmic rays accelerated in shock waves 215, 399
- Bergeron, J., Petitjean, P., Durret, F.: The high excitation extended gas in NGC 1068: a probe to the central hidden absorbing torus 213, 61
- Berger, M.A., see Dixon, A.M., et al. 225, 156
- Bergvall, N., Rönneback, J., Johansson, L.: ESO 341-IG04, an elliptical galaxy in the making 222, 49
- Berkhuijsen, E.M., Humphreys, R.M.: Distribution and luminosity function of OB stars in M31 214, 68
- Berkhuijsen, E.M., see Beck, R., et al. 222, 58
- Bernabeu, G., Magazzù, A., Stalio, R.: Stellar wind velocities and luminosities of O stars 226, 215
- Bernard, J.P., d'Hendecourt, L.B., Léger, A.: The influence of temperature on the infrared spectrum of the coronene molecule 220, 245
- Bertaux, J.L., see Dimarellis, E., et al. 208, 327
- Bertelli, G., see Chiosi, C., et al. 218, 339 (78, 89)
- Bertelli, G., see Chiosi, C., et al. 219, 167
- Berton, R.: Determination of solenoidal horizontal velocities in solar active regions 215, 168
- Bertout, C., see Bouvier, J. 211, 99
- Bertout, C., see Bouvier, J. 218, 337
- Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.: Colors of extended static model photospheres of M giants 213, 520 (77, 1)
- Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.: The effects of photospheric extension upon the spectra of M-type Mira variables 213, 209
- Beuermann, K., Schwöpe, A.D.: One-pole and two-pole X-ray emission in the AM Herculis binary BL Hydri 223, 179
- Beuermann, K., see Bonnet-Bidaud, J.M., et al. 213, 97
- Beuermann, K., see Motch, C., et al. 219, 158
- Beuermann, K., see Schwöpe, A.D. 222, 132
- Beuermann, K., see Siegel, N., et al. 225, 97
- Beuermann, K., see van der Woerd, H., et al. 220, 221
- Beuermann, K., Thomas, H.C., Giommi, P., Tagliaferri, G., Schwöpe, A.D.: EXO 032957-2606.9: a new long-period probable AM Herculis binary 219, L7
- Beust, H., Lagrange-Henri, A.M., Vidal-Madjar, A., Ferlet, R.: The  $\beta$  Pictoris circumstellar disk. IX. Theoretical results on the infall velocities of Ca II, Al III, and Mg II 223, 304
- Beust, H., see Lagrange-Henri, A.M., et al. 215, L5
- Bhatia, R.K., MacGillivray, H.T.: An automated search for star clusters in the Magellanic Clouds. I. Description of the technique and application to a 6 square degree field near the bar of the LMC 211, 9
- Bhatt, H.C.: Capture of field stars by molecular clouds 213, 299
- Bhatt, H.C.: CN 1-1: a bipolar type I planetary nebula 214, 331
- Bianchi, L., see Grewing, M., et al. 223, 172
- Bica, E., see Alloin, D. 217, 57
- Bica, E., see Arimoto, N. 222, 89
- Bica, E., see Bonatto, C., et al. 226, 23
- Bielski, A., Bobkowsky, R., Szudy, J.: Power-law dependence of the pressure broadening of spectral lines on temperature 208, 357
- Biémont, E., Grevesse, N., Faires, L.M., Marsden, G., Lawler, J.E., Whaling, W.: Lifetimes and transition probabilities in V II and the solar abundance of vanadium 209, 391
- Biémont, E., Grevesse, N., Hannaford, P., Lowe, R.M.: Lifetimes in Sm II and the solar abundance of samarium 222, 307
- Bienaymé, O., see Crézé, M., et al. 211, 1
- Biermann, P.L., Kronberg, P.P., Schmutzler, T.: Extended X-ray emission from hot gas around the normal giant elliptical galaxy NGC 5846 208, 22
- Biermann, P.L., see Chini, R., et al. 221, L3
- Biermann, P.L., see Chini, R., et al. 219, 87
- Biermann, P.L., see Mannheim, K. 221, 211
- Bignell, C., see Zijlstra, A.A., et al. 223, 378 (79, 329)
- Bijaoui, A., see Soubeyran, A., et al. 222, 27
- Bildhauer, S.: Freely propagating polarized radiation in curved space-times 219, 25
- Birch, P.V., Taylor, R.C.: Lightcurves and pole position of asteroid 3 Juno 226, 421 (81, 409)
- Bishop, I.S., see Heaton, B.D., et al. 213, 148
- Bisnovatyi-Kogan, G.S., Illarionov, A.F.: The nature of absorption features in the spectra of gamma-ray bursts 213, 107
- Bisnovatyi-Kogan, G.S., Mersov, G.A., Sheffer, E.K.: Can we expect a freely precessing neutron star in Her X-1? 221, L7
- Blaauw, A., see Pel, J.W., et al. 217, 394 (77, 513)
- Blackwell, D.E., see Booth, A.J., et al. 218, 167
- Blackwell, D.E., see Grevesse, N., et al. 208, 157
- Blackwell, D.E., see Petford, A.D. 219, 366 (78, 511)
- Blondel, P.F.C., Tjin A Djie, H.R.E., Thé, P.S.: The variable Herbig Ae star HR 5999. IX. Variability in the UV shell lines 223, 383 (80, 115)
- Bobkowsky, R., see Bielski, A., et al. 208, 357
- Bockelée-Morvan, D., Crovisier, J.: The nature of the 2.8- $\mu$ m emission feature in cometary spectra 216, 278
- Bockelée-Morvan, D., see Gérard, E., et al. 217, 392 (77, 379)
- Bockelée-Morvan, D., see Gulkis, S., et al. 213, 465
- Bock, U., see Maile, T., et al. 223, 251
- Bock, U., see Rebetzky, A., et al. 225, 137
- Bodenheimer, P., see Różyczka, M., et al. 208, 69
- Bodenheimer, P., see Yorke, H.W., et al. 216, 207
- Bodo, G., see Massaglia, S., et al. 209, 399
- Böhm, C., see Ramella, M., et al. 209, 233
- Boehnhardt, H., Drechsel, H., Vanysek, V., Waha, L.: Photometric investigation of comets Bradfield 1987S and P/Borely 220, 286
- Böhringer, H., Hensler, G.: Metallicity-dependence of radiative cooling in optically thin, hot plasmas 215, 147
- Börner, G., Deng, Z.-G., Xia, X.-Y.: The two-point correlation functions of galaxies with different luminosities 209, 1
- Börner, G., see Hongguang Bi, et al. 218, 19
- Börner, G., see Sawada, K., et al. 221, 263
- Börner, G., Houjun Mo: A percolation analysis of cluster superclustering 224, 1
- Börner, G., Houjun Mo: Geometrical analysis of galaxy clustering: dependence on luminosity 223, 25



- Börner, G., Houjun Mo, Yaoquan Chu: Richness-dependence of cluster-cluster correlations **219**, 29
- Börner, G., Houjun Mo, Youyuan Zhou: Correlation functions of galaxies with different weightings according to luminosity and mass **221**, 191
- Boer, M., Hurley, K., Gottardi, M., Motch, C., Pedersen, H., Simonsen, R.L.: Constraints on the optical counterpart of GBS 0526-66 **214**, 148
- Boffin, H.M.J., Jorissen, A.: HD 145206: the first semibarium star with a main-sequence close companion? **224**, L31
- Bogey, M., see Gerin, M., et al. **224**, L24
- Bohlender, D.A.: The magnetic field and rotation period of the Ap star HD 4778 **220**, 215
- Bohme, D.K., see Herbst, E., et al. **222**, 205
- Boissel, P., see Léger, A., et al. **213**, 351
- Boisson, C., Cayatte, V., Sol, H.: The extended emission line region of the active galaxy PKS 0521-36 **211**, 275
- Boland, W., see Waters, L.B.F.M., et al. **213**, L19
- Bommier, V., Landi Degl'Innocenti, E., Sahal-Bréchet, S.: Linear polarization of the hydrogen H $\alpha$  line in filaments. I. Theoretical investigation **211**, 230
- Bonaccini, D., Cavallini, F., Ceppatelli, G., Righini, A.: High resolution solar bidimensional spectroscopy with a Universal Birefringent Filter in tandem with a Fabry-Perot interferometer **217**, 368
- Bonatto, C., Bica, E., Alloin, D.: The stellar-free emission component in galactic nuclei: at low-levels, evidence for shock ionization **226**, 23
- Bondar, N.I., see Belyakina, T.S., et al. **223**, 119
- Bondi, M., see Gregorini, L. **225**, 333
- Bonifazi, P., see Amaldi, E., et al. **216**, 325
- Bonnet-Bidaud, J.M., Motch, C., Beuermann, K., Pakull, M.W., Parmar, A.N., van der Klis, M.: LMC X-2: an extragalactic bulge-type source **213**, 97
- Bonnet-Bidaud, J.M., see van der Klis, M. **214**, 203
- Bonoli, C., see Fasano, G. **223**, 377 (79, 291)
- Bonometto, S.A., see Borgani, S. **215**, 17
- Booth, A.J.: Accurate solar photospheric abundances: a comparison with meteorite data **208**, 287
- Booth, A.J., Selby, M.J., Blackwell, D.E., Petford, A.D., Arribas, S.: Determination of the absolute flux from Vega at 2.250  $\mu$ m **218**, 167
- Booth, R.S., Delgado, G., Hagström, M., Johansson, L.E.B., Murphy, D.C., Olberg, M., Whyborn, N.D., Greve, A., Hansson, B., Lindström, C.O., Rydberg, A.: The Swedish-ESO Submillimetre Telescope (SEST) **216**, 315
- Borgani, S., Bonometto, S.A.: Galaxy density in biased theories of galaxy origin **215**, 17
- Borgnino, J., see Druesne, P., et al. **217**, 229
- Borsenberger, J., see Artru, M.-C., et al. **223**, 381 (80, 17)
- Boscaleri, A., see Masi, S., et al. **226**, 357
- Bosma, P.B., see de Rooij, W.A., et al. **226**, 347
- Bossi, M., Gaspari, A., Scardia, M., Tadini, M.:  $\theta^1$  Orionis A: a pre-main sequence low  $q$  binary system? **222**, 117
- Bottema, R.: The intricate kinematics of the Sb spiral galaxy NGC 2613 **225**, 358
- Bottema, R.: The stellar velocity dispersion of the spiral galaxies NGC 6503 and NGC 6340 **221**, 236
- Bottinelli, L., see Martin, J.M., et al. **208**, 39
- Bottinelli, L., see Paturel, G., et al. **224**, 366 (80, 299)
- Bouchet, P., see Gillet, D., et al. **215**, 316
- Bouchet, P., see Maurice, E., et al. **219**, 365 (78, 445)
- Bouchet, P., Moneti, A., Slezak, E., Le Bertre, T., Manfroid, J.: Infrared photometry and spectrophotometry of SN 1987 A. I. March to October 1987 observations **224**, 367 (80, 379)
- Bouchet, P., see Soubeyran, A., et al. **222**, 27
- Bouchet, L., see Zahn, J.-P. **223**, 112
- Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tourrenc, P.: Towards the birth of gravitational astronomy. I. Number of events expected from gravitational wave detection by interferometry **217**, 375
- Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tourrenc, P.: Towards the birth of gravitational astronomy. II. Directivity and number of events in coincidences expected from gravitational wave detection by interferometry **217**, 381
- Boulares, A.: Reduction of the Oort limit and the dark matter contribution to it **209**, 21
- Boulesteix, J., see Amram, P., et al. **226**, 415 (81, 59)
- Boulesteix, J., see Laval, A., et al. **208**, 230
- Bouquet, A., Kaplan, J., Martin, F.: Weakly interacting massive particles and stellar structure **222**, 103
- Bouquet, A., Salati, P.: Life and death of cosmions in stars **217**, 270
- Bourdonneau, B., see Doazan, V., et al. **210**, 249
- Bourgeois, G., see Gérard, E., et al. **217**, 392 (77, 379)
- Bouvier, J., Bertout, C.: Spots on T Tauri stars **211**, 99
- Bouvier, J., Bertout, C.: *Erratum*: Spots on T Tauri stars **218**, 337
- Bovenschen, H., see van Genderen, A.M., et al. **223**, 376 (79, 263)
- Bowell, E., see Karttunen, H. **208**, 320
- Brand, J., see Wouterloot, J.G.A. **224**, 362 (80, 149)
- Brand, J., Wouterloot, J.G.A., Becker, R., Stirpe, G.M.: High spectral-resolution CO observations of NGC 6814 and NGC 7793 **211**, 315
- Brandenburg, A., Krause, F., Meinel, R., Moss, D., Tuominen, I.: The stability of nonlinear dynamos and the limited role of kinematic growth rates **213**, 411
- Brandenburg, A., see Vilhu, O., et al. **222**, 179
- Brandi, E., Garcia, L.G., Kondo, Y., Sahade, J.: The region of formation of the ultraviolet high temperature resonance lines in the eclipsing binary  $\beta$  Persei (Algol) **215**, 331
- Braz, M.A., Scalise, Jr., E., Gregorio Hetem, J.C., Monteiro do Vale, J.L., Gaylard, M.: Search for water vapor masers in the direction of IRAS sources associated with H II regions and molecular clouds **217**, 393 (77, 465)
- Breger, M., Garrido, R., Huang Lin, Jiang Shi-yang, Guo Zi-he, Frueh, M., Paparo, M.: Multiple close frequencies of the Delta Scuti star  $\theta^2$  Tauri. II. The second multisite campaign **214**, 209
- Breger, M., Weiss, W.W., Wills, B.J.: Linear polarization of Babcock's star **215**, 48
- Bregman, J.D., see Schwarz, U.J., et al. **215**, 33
- Brett, J.M., see Bessell, M.S., et al. **213**, 520 (77, 1)
- Brett, J.M., see Bessell, M.S., et al. **213**, 209
- Breukers, R.J.L.H., see van der Veen, W.E.C.J. **213**, 133
- Breukers, R.J.L.H., see van Genderen, A.M., et al. **213**, 161
- Brinkmann, W., Fink, H.H., Smith, A., Haberl, F.: Non-equilibrium ionisation in supernova remnants: the case of Tycho **221**, 385
- Brinkmann, W., Kawai, N., Matsuoka, M.: SS 433 - the puzzle continues **218**, L13
- Broeils, A.H., see Wakker, B.P., et al. **226**, 57
- Brogia, P., Manara, A.: Rotational variations in the optical polarization of 4 Vesta **214**, 389

- Bronfman, L., see Nyman, L.-Å., et al. 216, 185
- Brosche, P., Seiler, U., Sündermann, J., Wünsch, J.: Periodic changes in Earth's rotation due to oceanic tides 220, 318
- Brosche, P., Tassie, L.J.: A scenario for the formation of astronomical objects from superstrings 219, 13
- Brosche, P., Wildermann, E., Geffert, M.: Astrometric plate reductions with orthogonal functions 211, 239
- Browning, P.K., see Dixon, A.M., et al. 225, 156
- Brown, A., see Linsky, J.L., et al. 211, 173
- Brown, J.C., see Almleaky, Y.M., et al. 224, 328
- Brown, J.C., see MacKinnon, A.L. 215, 371
- Brown, P.J.F., see Conlon, E.S., et al. 224, 65
- Bruch, A.: Spectroscopy of poorly known northern dwarf novae. Part I 218, 340 (78, 145)
- Bruch, A.: *Erratum*: Spectroscopy of poorly known northern dwarf novae. Part I 223, 380 (79, 451)
- Buat, V.: Large-scale aspects of current star formation in the disk of Messier 81 220, 49
- Buat, V., Deharveng, J.M., Donas, J.: Star formation rate and gas surface density in late-type galaxies 223, 42
- Buchert, T.: A class of solutions in Newtonian cosmology and the pancake theory 223, 9
- Bucizilowski, U.R., see Harnett, J.I., et al. 208, 32
- Buitrago, J., Mediavilla, E., Portilla, M.: Radiation-induced forces on the orbits of dust particles around rotating stars 221, 258
- Bujarrabal, V., Gómez-González, J., Planesas, P.: CO and SiO thermal emission in evolved stars 219, 256
- Bujarrabal, V., see Alcolea, J., et al. 211, 187
- Bujarrabal, V., see Bachiller, R., et al. 210, 366
- Bujarrabal, V., see Bachiller, R., et al. 218, 252
- Bujarrabal, V., see Barcia, A., et al. 215, L9
- Buonanno, R., Corsi, C.E., Fusi Pecci, F.: The ages of globular clusters and the Sandage period-shift effect 216, 80
- Buontempo, M.E., see Lagerkvist, C.-I., et al. 219, 366 (78, 519)
- Burger, P., Lamers, H.J.G.L.M.: Analytical expressions for the Rosseland-mean opacity and electron scattering in stellar atmospheres 218, 161
- Burgess, A., Mason, H.E., Tully, J.A.: Coronal  $Mg^{+9}$ : collisional excitation of the  $2s-2p$  multiplet 217, 319
- Burkhart, C., Coupry, M.F.: Am stars of the Hyades cluster: temperatures, lithium, and the heavier elements, Al, Si, and Fe 220, 197
- Burkhart, C., see van 't Veer-Menneret, C., et al. 224, 171
- Burki, G., Cramer, N., Burnet, M., Rufener, F., Pernier, B., Richard, C.: The Geneva photometric monitoring of SN 1987A 213, L26
- Burki, G., see Babel, J., et al. 216, 125
- Burki, G., see Gillet, D., et al. 225, 445
- Burnage, R., see Fehrenbach, Ch., et al. 224, 367 (80, 433)
- Burnet, M., see Burki, G., et al. 213, L26
- Busarello, G., Filippi, S., Ruffini, R.: Anisotropic and inhomogeneous tensor virial models for elliptical galaxies with figure rotation and internal streaming 213, 80
- Busarello, G., see Longo, G., et al. 225, L17
- Buser, R., see Cacciari, C., et al. 209, 141
- Buser, R., see Cacciari, C., et al. 209, 154
- Buson, L.M., see Munari, U., et al. 214, L5
- Butler, C.J., see Doyle, J.G., et al. 223, 219
- Butler, C.J., see Doyle, J.G., et al. 208, 208
- Butler, K., see Becker, S.R. 209, 244
- Butler, K., see Becker, S.R., et al. 221, 375
- Butler, K., see Husfeld, D., et al. 222, 150
- Butler, K., see Schöning, T. 218, 339 (78, 51)
- Butler, K., see Schöning, T. 219, 326
- Butler, K., see Schöning, T. 220, 344 (79, 153)
- Butler, K., Zeippen, C.J.: Effective collision strengths for fine-structure forbidden transitions in the  $3p^3$  configuration of Cl III 208, 337
- Byard, K., see Dean, A.J., et al. 219, 358
- Byrd, G.G., see Thomasson, M., et al. 211, 25
- Byrne, P.B., Doyle, J.G.: Activity in late-type dwarfs. III. Chromospheric and transition region line fluxes for two dM stars 208, 159
- Byrne, P.B., McKay, D.: Activity in late-type stars. IV. The 1980 August 20 flare on Proxima Centauri revisited 223, 241
- Byrne, P.B., Panagi, P., Doyle, J.G., Englebrecht, C.A., McMahon, R., Marang, F., Wegner, G.: Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XII. Near-to-simultaneous high resolution UV and optical observations of II Pegasi during July 1984 214, 227
- Byrne, P.B., see Doyle, J.G., et al. 224, 153
- Byrne, P.B., see Doyle, J.G., et al. 223, 219
- Bááth, L., see Tang, G., et al. 216, 31
- Cabanne, M.L., see Kudritzki, R.P., et al. 226, 235
- Cacciari, C., Clementini, G., Buser, R.: The Baade-Wesselink method applied to field RR Lyrae stars. III. YZ Capricorni, RV Phoenixis, and V440 Sagittarii 209, 154
- Cacciari, C., Clementini, G., Prevot, L., Buser, R.: The Baade-Wesselink method applied to field RR Lyrae stars. II. SW Andromedae, SW Draconis, and SS Fornacis 209, 141
- Cai Xin, see Hu Hui, et al. 224, 321
- Caimmi, R.: Acquisition of angular momentum by tidal torques in expanding, spherical-symmetric density perturbations: an analysis of different approximations 223, 29
- Callahan, J.D., see Duxbury, T.C. 216, 284
- Caloi, V.: Evolution of extreme horizontal branch stars 221, 27
- Calzetti, D., Giavalisco, M., Ruffini, R.: The angular two-point correlation function and the cellular fractal structure of the Universe 226, 1
- Camenzind, M., see Courvoisier, T.J.-L. 224, 10
- Camenzind, M., see Lesch, H., et al. 225, 341
- Cameron Reed, B.: Photographic *UBV* photometry to  $V \sim 21$  in the Puppis window 217, 393 (77, 447)
- Campbell, J.K., see Jacobson, R.A., et al. 225, 548
- Canalle, J.B.G., Opher, R.: Cyclotron spectrum from a dipole magnetic field accretion column 219, 334
- Canuto, V.M.: AMLT: anisotropic mixing length theory 217, 333
- Capaccioli, M., see Longo, G., et al. 225, L17
- Caplan, J., see Ballet, J., et al. 211, 217
- Cappa de Nicolau, C.E., see Bajaja, E., et al. 219, 363 (78, 345)
- Cappellaro, E., see Barbon, R., et al. 226, 421 (81, 421)
- Cappellaro, E., see Turatto, M., et al. 217, 79
- Cappellaro, E., Turatto, M., Sabbadin, F.: A newly discovered compact planetary nebula 218, 241
- Cappelli, A., Cerruti-Sola, M., Cheng, C.C., Pallavicini, R.: A comparison of solar and stellar ultraviolet spectra obtained with SKYLAB and IUE 213, 226
- Cappi, A., Chincarini, G., Conconi, P., Vettolani, G.: Detection of distant galaxy clusters 223, 1
- Cappi, A., see Vettolani, G., et al. 220, 344 (79, 147)

- Caputo, F., Castellani, V., Tornambé, A.: The Oosterhoff dichotomy revisited. II. Pulsational constraints on the luminosity of RR Lyrae variables in OoII and OoI globular clusters **222**, 121
- Carrelli, P., see Amaldi, E., et al. **216**, 325
- Carlini, A., Treves, A.: A precessing neutron star model for E 2259+586 **215**, 283
- Carli, R., see Greenhill, J.G., et al. **208**, L1
- Carpay, J., de Jager, C., Nieuwenhuijzen, H., Moffat, A.: Mass loss rate and atmospheric turbulence of the B2 hypergiant HD 80077 **216**, 143
- Carpino, M., see Farinella, P., et al. **217**, 298
- Carpino, M., see Nobili, A.M., et al. **210**, 313
- Carquillat, J.M., see Pédoussaut, A., et al. **219**, 364 (78, 441)
- Casali, M.M., see Eiroa, C. **223**, L17
- Casoli, F., Combes, F., Augarde, R., Figon, P., Martin, J.M.: Distribution of gas and star-forming regions in M81: Three galaxies? **224**, 31
- Cassatella, A., see Humphreys, R.M., et al. **218**, L17
- Cassé, M., see Lehoucq, R., et al. **224**, 117
- Castellani, V., Chieffi, A., Norci, L.: The luminosity distribution of population II red giants **216**, 62
- Castellani, V., see Caputo, F., et al. **222**, 121
- Castellano, M.G., see Amaldi, E., et al. **216**, 325
- Castelli, F., see van 't Veer-Menneret, C., et al. **224**, 171
- Caswell, J.L., see Forster, J.R. **213**, 339
- Caswell, J.L., see Zijlstra, A.A., et al. **217**, 157
- Catalano, F.A., see Baratta, G.A., et al. **219**, 322
- Catala, C., see Güdel, M., et al. **217**, L9
- Catala, C., Simon, T., Praderie, F., Talavera, A., Thé, P.S., Tjin A Dje, H.R.E.: Active phenomena in the pre-main sequence Herbig Ae star HD163296 **221**, 273
- Catullo, V., see Oberti, P., et al. **224**, 365 (80, 289)
- Caux, E., see Giard, M., et al. **215**, 92
- Cavallari, G., see Amaldi, E., et al. **216**, 325
- Cavallini, F., see Bonaccini, D., et al. **217**, 368
- Cavarischia, G.A., Morras, R.: Study of the fine structure in a high-velocity velocity cloud **219**, 364 (78, 437)
- Cawley, M.F., see Fegan, D.J., et al. **211**, L1
- Cayatte, V., see Boisson, C., et al. **211**, 275
- Cayrel de Strobel, G., Bontolila, C.: In search of real solar twins. II **211**, 324
- Cayrel de Strobel, G., Cayrel, R.: Strong lithium in the very nearby K-dwarf HD 17925 **218**, L9
- Cayrel de Strobel, G., Perrin, M.-N., Cayrel, R., Lebreton, Y.: A thorough spectroscopic study of the very nearby triple system: 36 Ophiuchi **225**, 369
- Cayrel, R., see Cayrel de Strobel, G. **218**, L9
- Cayrel, R., see Cayrel de Strobel, G., et al. **225**, 369
- Cellino, A., Di Martino, M., Drummond, J., Farinella, P., Paolicchi, P., Zappalà, V.: Vesta's shape, density and albedo features **219**, 320
- Cellino, A., see Di Martino, M., et al. **223**, 352
- Centurion, M., Vladilo, G.: The reflection nebula around HD 26676 **218**, 243
- Cepa, J., Beckman, J.E.: Spatial and luminosity distributions of the ionized hydrogen in NGC 3992 **220**, 342 (79, 41)
- Cepatelli, G., see Bonaccini, D., et al. **217**, 368
- Cernicharo, J., Guélin, M., Martín-Pintado, J., Peñalver, J., Mauersberger, R.: A 200 km s<sup>-1</sup> molecular outflow in the protoplanetary nebula CRL 618 **222**, L1
- Cernicharo, J., see Lucas, R. **218**, L20
- Cernicharo, J., see Mauersberger, R., et al. **223**, 376 (79, 217)
- Cerruti-Sola, M., see Cappelli, A., et al. **213**, 226
- Cersosimo, J.C., Azcárate, I.N., Hart, L., Colomb, F.R.: H 166  $\alpha$  emission from the southern galactic plane **208**, 239
- Cesarsky, C.J., see Lehoucq, R., et al. **224**, 117
- Chalabaev, A.A., Perrier, C., Mariotti, J.-M.: Infrared emission from the sub-arcsecond vicinity of SN 1987A **210**, L1
- Chan, K.L., Chiu, H.-Y., Kondo, Y.: The modified correlation mass method for detecting neutrino mass from astrophysical neutrino bursts **215**, 387
- Chardin, G., Gerbier, G.: Cygnus X-3 at high energies: a critical analysis of observational results **210**, 52
- Charlot, P., Hough, D.H., Lestrade, J.-F.: A method to estimate the motion of unresolved VLBI components in extragalactic radio sources. The case of NRAO 140 **211**, 261
- Chatzichristou, H., see Floquet, M., et al. **214**, 295
- Chauville, J., see Ballereau, D. **214**, 285
- Chauville, J., see Floquet, M., et al. **214**, 295
- Chavarria-K., C., Leitherer, C., de Lara, E., Sánchez, O., Zickgraf, F.-J.: Further observations of stars associated with the Sharpless H II region Sh 2-252, and of the Herbig A0e star Sh 2-252b **215**, 51
- Chavez, M., see Arellano Ferro, A., et al. **214**, 123
- Cheeseman, P., see Goebel, J., et al. **222**, L5
- Chelli, A.: The phase problem in optical interferometry: error analysis in the presence of photon noise **225**, 277
- Chen Cuixian, see Hu Hui, et al. **224**, 321
- Cheng, C.C., see Cappelli, A., et al. **213**, 226
- Chevalier, C., Ilovaisky, S.A., Motch, C., Pakull, M.W., Mouchet, M.: Transient low-mass X-ray binaries in quiescence. II. CCD photometry and spectroscopy of 4U 2129+47 **217**, 108
- Chevalier, C., Ilovaisky, S.A., van Paradijs, J., Pedersen, H., van der Klis, M.: Optical studies of transient low-mass X-ray binaries in quiescence. I. Centaurus X-4: orbital period, light curve, spectrum and models for the system **210**, 114
- Chevreton, M., see Cuby, J.G., et al. **220**, 335
- Chevreton, M., see Vanderriest, C., et al. **215**, 1
- Chevreton, M., see Vauclair, G., et al. **215**, L17
- Chieffi, A., see Castellani, V., et al. **216**, 62
- Chièze, J.P., Pineau des Forêts, G.: Dynamical mixing in molecular clouds **221**, 89
- Chincarini, G., see Cappi, A., et al. **223**, 1
- Chincarini, G., see Fairall, A.P., et al. **218**, 343 (78, 269)
- Chincarini, G., see Vettolani, G., et al. **220**, 344 (79, 147)
- Chini, R., Biermann, P.L., Kreysa, E., Gemünd, H.-P.: 870 and 1300  $\mu$ m observations of radio quasars **221**, L3
- Chini, R., Kreysa, E., Biermann, P.L.: The nature of radio-quiet quasars **219**, 87
- Chini, R., Krügel, E., Kreysa, E., Gemünd, H.-P.: The submillimeter continuum of active galaxies **216**, L5
- Chini, R., see Meisenheimer, K., et al. **219**, 63
- Chini, R., see Mezger, P.G., et al. **209**, 337
- Chini, R., see Neckel, T., et al. **210**, 378
- Chini, R., see Salter, C.J., et al. **220**, 42
- Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S.: Globular clusters in the Large Magellanic Cloud: CCD photometry of NGC 1866 **218**, 339 (78, 89)
- Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S.: Globular clusters in the Large Magellanic Cloud: NGC 1866, a test for convective overshoot **219**, 167
- Chirikov, B.V., Vecheslavov, V.V.: Chaotic dynamics of comet P/Halley **221**, 146
- Chiu, H.-Y., see Chan, K.L., et al. **215**, 387

- Chlewicki, G., see Laureijs, R.J., et al. 220, 226  
 Chlewicki, G., see Zhang, C.Y., et al. 218, 231  
 Chmielewski, Y., see Babel, J., et al. 216, 125  
 Chochol, D., see Belyakina, T.S., et al. 223, 119  
 Chollet, F., Baudu, J.P., Débarbat, S., Golbasi, O., Lam, S.K., Texier, P.: Results of observations made in Paris with the astrolabe in 1988 226, 418 (81, 285)  
 Chrysovergis, M., Kontizas, M., Kontizas, E.: Observed dynamical parameters of the disk clusters of the Large Magellanic Cloud. II 217, 392 (77, 357)  
 Churchwell, E., see Felli, M., et al. 217, 179  
 Chuvae, K.K., see Belyakina, T.S., et al. 223, 119  
 Chyba, C.F., Jankowski, D.G., Nicholson, P.D.: Tidal evolution in the Neptune-Triton system 219, L23  
 Ciatti, F., see Barbon, R., et al. 214, 131  
 Ciotti, L., D'Ercole, A.: SNR expansion in a pre-existent cavity 215, 347  
 Clampin, M., Paresce, F.: Photon-counting imaging with a GaAs photocathode: evaluation of the Red-RANICON for astronomical imaging 225, 578  
 Claret, A., Giménez, A.: A detailed grid of evolutionary stellar models during hydrogen burning phases 226, 415 (81, 1)  
 Claret, A., Giménez, A.: The moment of inertia of main sequence stars 226, 415 (81, 37)  
 Clariá, J.J., Lapasset, E., Minniti, D.: Photometric metal abundances of high-luminosity red stars in young and intermediate-age open clusters 219, 363 (78, 363)  
 Clark, F.O., see Laureijs, R.J., et al. 220, 226  
 Clark, F.O., see Zhang, C.Y., et al. 218, 231  
 Clausen, J.V., Giménez, A., Helt, B.E., Jensen, K.S., Vaz, L.P.R.: Four-colour photometry of eclipsing binaries. XXXI. Light curves of EM Carinae 215, 410 (77, 257)  
 Clausen, J.V., Nordström, B., Andersen, J.: Four-colour photometry of eclipsing binaries. XXXII. Light curves of V 1031 Orionis 226, 418 (81, 197)  
 Clausen, J.V., see Andersen, J. 213, 183  
 Clausen, J.V., see Andersen, J., et al. 211, 346  
 Claussen, M.J., see Sahai, R., et al. 220, 92  
 Clauzet, L.B.F.: The third astrolabe catalogue at Valinhos 213, 521 (77, 67)  
 Clavel, J., see Reimers, D., et al. 218, 71  
 Clavel, J., see Rodríguez-Pascual, P.M., et al. 219, 101  
 Clayton, C.A.: The implications of image scrambling and focal ratio degradation in fibre optics on the design of astronomical instrumentation 213, 502  
 Clayton, C.A., see Meaburn, J., et al. 208, 17  
 Clementini, G., see Cacciari, C., et al. 209, 141  
 Clementini, G., see Cacciari, C., et al. 209, 154  
 Coccia, E., see Amaldi, E., et al. 216, 325  
 Colina, L., see Perryman, M.A.C., et al. 215, 195  
 Colin, J., Athanassoula, E.: Asymmetrical barred galaxies 214, 99  
 Collados, M., see Sánchez-Almeida, J., et al. 222, 311  
 Collin-Souffrin, S., Dumont, A.M.: Emission spectra of weakly photoionized media in active nuclei of galaxies 213, 29  
 Colom, P., see Gérard, E., et al. 217, 392 (77, 379)  
 Colomb, F.R., see Cersosimo, J.C., et al. 208, 239  
 Combes, F., see Casoli, F., et al. 224, 31  
 Combes, F., see Gerin, M., et al. 224, L24  
 Combes, M., see Lacombe, F., et al. 215, 211  
 Conard, J., see Papoular, R., et al. 217, 204  
 Conconi, P., see Cappi, A., et al. 223, 1  
 Conlon, E.S., Brown, P.J.F., Dufton, P.L., Keenan, F.P.: Peculiar and normal early-type stars in the galactic halo 224, 65  
 Contini, M., see Viegas-Aldrovandi, S.M. 215, 253  
 Conti, P.S., see St-Louis, N., et al. 226, 249  
 Conti, P.S., see Willis, A.J., et al. 215, 410 (77, 269)  
 Contopoulos, G.: Editorial 211, E1  
 Contopoulos, G., Barbanis, B.: Lyapunov characteristic numbers and the structure of phase-space 222, 329  
 Copetti, M.V.F., Dottori, H.A.: Global photometric observations of 30 H II regions in the Small Magellanic Cloud 215, 411 (77, 327)  
 Corsi, C.E., see Buonanno, R., et al. 216, 80  
 Cosmelli, C., see Amaldi, E., et al. 216, 325  
 Costa, E., Loyola, P.: Optical positions of radiostars. I 218, 340 (78, 141)  
 Coté, J., Pylyser, E.H.P.: The birthrates of galactic low mass binary radio pulsars and their progenitor systems 218, 131  
 Coté, J., see Waters, L.B.F.M., et al. 220, L1  
 Couch, W.J., see Hansen, L., et al. 211, L9  
 Coupry, M.F., see Burkhardt, C. 220, 197  
 Courtès, G., see Adam, G., et al. 208, L15  
 Courvoisier, T.J.-L., Camenzind, M.: The wind and shock model for quasars: confrontation with observations of 3C 273 224, 10  
 Couteau, P.: Measurements of visual double stars made at Pic-du-Midi and Nice 223, 379 (79, 385)  
 Couteau, P.: Orbits of six visual double stars 224, 367 (80, 373)  
 Couteau, P., Docobo, J.A., Elipse, A., Ling, J.F.: Measurements of visual double stars made with the 152 cm telescope at Calar Alto 219, 365 (78, 483)  
 Cox, P.: The line of sight towards AFGL 961: detection of the libration band of water ice at 13.6  $\mu$ m 225, L1  
 Cox, P., Walmsley, C.M., Güsten, R.: C<sub>3</sub>H<sub>2</sub> observations in dense dark clouds 209, 382  
 Cramer, N., see Burki, G., et al. 213, L26  
 Crézé, M., Robin, A.C., Bienaymé, O.: The mass density in our Galaxy. II. F dwarfs and K giants as density tracers 211, 1  
 Crifo, J.F.: Inferences concerning water vapour viscosity and mean free path at low temperatures 223, 365  
 Cristiani, S., Barbieri, C., Iovino, A., La Franca, F., Nota, A.: Quasars in the field of SA 94. III. A colour survey 215, 409 (77, 161)  
 Crivellari, L., see Arribas, S. 210, 211  
 Crivellari, L., see Foing, B.H., et al. 224, 362 (80, 189)  
 Crivellari, L., see Rebolo, R., et al. 224, 362 (80, 135)  
 Crovisier, J.: The photodissociation of water in cometary atmospheres 213, 459  
 Crovisier, J., see Bockelée-Morvan, D. 216, 278  
 Crovisier, J., see Gérard, E., et al. 217, 392 (77, 379)  
 Crovisier, J., see Gulkis, S., et al. 213, 465  
 Crowe, R.A., see Gillet, D., et al. 225, 445  
 Crowe, R., Gillet, D.: Shock phenomena in  $\beta$  Cephei stars 211, 365  
 Crusius, A., see Lesch, H., et al. 209, 427  
 Crusius, A., see Lesch, H., et al. 217, 99  
 Cuby, J.G., Baudrand, J., Chevreton, M.: The Thomson THX 31513 linear array in a photon counting mode under electron bombardment: evaluation tests and first results 220, 335  
 Cugier, H.: Carbon abundance in the primaries of six Algol-type stars 214, 168  
 Cugier, H., see De Greve, J.P. 211, 356



- Culhane, J.L., see van den Oord, G.H.J., et al. **209**, 296
- Cuntz, M., Muchmore, D.: Time-dependent effects of acoustic wave heating and molecular cooling in the outer atmosphere of Arcturus **209**, 305
- Cuperman, S., Ofman, L., Semel, M.: Determination of constant- $\alpha$  force-free magnetic fields above the photosphere using three-component boundary conditions **216**, 265
- Cutispoto, G., see de Jager, C., et al. **211**, 157
- Cuyppers, J., Balona, L.A., Marang, F.: Intensive photometry of southern Be variables. I. Winter objects **226**, 418 (**81**, 151)
- Dachs, J., Kabus, H.: *UBV* photometry and the structure of the galactic cluster NGC 2516 **218**, 338 (**78**, 25)
- Dachs, J., Poetzel, R., Kaiser, D.: Spectral energy distributions of Be stars. III. Envelope models derived from new measurements for 17 stars **219**, 365 (**78**, 487)
- Dačić, M., see Sadžakov, S. **217**, 392 (**77**, 411)
- Dallacasa, D., Feretti, L., Giovannini, G., Venturi, T.: Multifrequency observations of the tailed radio source NGC 4869 in the Coma cluster **223**, 379 (**79**, 391)
- Dall'Oglio, G., see Masi, S., et al. **226**, 357
- Daly, P.W.: The use of Kepler trajectories to calculate ion fluxes at multi-gigameter distances from comet Halley **226**, 318
- D'Ambrosio, V., see Arlot, J.E., et al. **213**, 479
- Damen, E., see Penninx, W., et al. **208**, 146
- D'Antona, F., Mazzitelli, I., Ritter, H.: The turn-on of mass transfer in cataclysmic binaries **225**, 391
- D'Antona, F., see Gratton, R.G. **215**, 66
- Danziger, I.J., see Oliva, E., et al. **214**, 307
- David, M., see Verschueren, W. **219**, 105
- David, P., see Gillet, D., et al. **220**, 185
- Davis, R.J., see Güdel, M., et al. **220**, L5
- Davoust, E., see Prugniel, P., et al. **222**, 5
- Da-run Xiong: Numerical simulations of nonlocal convection **213**, 176
- Da-run Xiong: Radiation-hydrodynamic equations for stellar oscillations **209**, 126
- de Bernardis, P., see Masi, S., et al. **226**, 357
- de Bruyn, A.G.: 0309+411, an Mpc-sized core-dominated radio galaxy/quasar **226**, L13
- de Bruyn, A.G., see Stirpe, G.M., et al. **211**, 310
- de Bruyn, A.G., see van Groningen, E. **211**, 293
- de Geus, E.J., de Zeeuw, P.T., Lub, J.: Physical parameters of stars in the Scorpio-Centaurus OB association **216**, 44
- De Greve, J.P.: Evolutionary models for detached close binaries: the systems V 539 Arae and QX Carinae **213**, 195
- De Greve, J.P., Cugier, H.: Evolution of the surface abundance of carbon in mass-exchanging binaries **211**, 356
- de Groot, M.S., see Grim, R.J.A., et al. **218**, 341 (**78**, 161)
- de Haan, J.F., see Stammes, P., et al. **225**, 239
- de Jager, C., Heise, J., van Genderen, A.M., Foing, B.H., Ilyin, I.V., Kilkenny, D., Avgoloups, S., Marvridis, L., Cutispoto, G., Rodonò, M., Seeds, M.A., Yuen K.Ng., van Driel, W., Rabattu, X., Zodi, A.M., Vilas Boas, J.W.S., Scalise, E., Schaal, R.E., Kaufmann, P., Waelkens, C.: Coordinated observations of a large impulsive flare on UV Ceti **211**, 157
- de Jager, C., see Carpay, J., et al. **216**, 143
- De Jager, O.C., Swanepoel, J.W.H., Raubenheimer, B.C.: A powerful test for weak periodic signals with unknown light curve shape in sparse data **221**, 180
- de Jong, T.: Carbon stars with oxygen-rich circumstellar envelopes! **223**, L23
- de Jong, T., see Onaka, T., et al. **218**, 169
- de Jong, T., see Onaka, T., et al. **226**, 418 (**81**, 261)
- de Lara, E., see Chavarría-K., C., et al. **215**, 51
- de Martino, D., see Waters, L.B.F.M., et al. **223**, 207
- de Rooij, W.A., Bosma, P.B., van Hooff, J.P.C.: A simple method for calculating the *H*-matrix for molecular scattering **226**, 347
- de Santis, E., see Masi, S., et al. **226**, 357
- de Winter, D., see Hu, J.Y., et al. **208**, 213
- de Winter, D., see Thé, P.S., et al. **226**, 415 (**81**, 115)
- de Zeeuw, P.T., see de Geus, E.J., et al. **216**, 44
- De Zotti, G., see Xu, C. **225**, 12
- Dean, A.J., Lei Fan, Byard, K., Goldwurm, A., Hall, C.J., Harding, J.S.J.: The gamma-ray emissivity of the Earth's atmosphere **219**, 358
- Débarbat, S., see Chollet, F., et al. **226**, 418 (**81**, 285)
- Défourneau, D., see Léger, A., et al. **216**, 148
- Degenhardt, D.: Stationary siphon flows in thin magnetic flux tubes **222**, 297
- Deharveng, J.M., see Buat, V., et al. **223**, 42
- del Toro Iniesta, J.C., see Sánchez-Almeida, J., et al. **222**, 311
- Delgado, A.J., Alfaro, E.J.: The calibration of intrinsic colours in *uvby* photometry **219**, 121
- Delgado, G., see Booth, R.S., et al. **216**, 315
- Demircan, O., see Aslan, Z., et al. **208**, 385
- Démoulin, P., Malherbe, J.M., Priest, E.R.: The magnetic field around quiescent solar prominences computed from observational boundary conditions **211**, 428
- Démoulin, P., Priest, E.R.: A twisted flux model for solar prominences. II. Formation of a dip in a magnetic structure before the formation of a solar prominence **214**, 360
- Démoulin, P., Priest, E.R., Anzer, U.: A three-dimensional model for solar prominences **221**, 326
- Démoulin, P., see Schmieder, B., et al. **213**, 402
- Deng, Z.-G., see Börner, G., et al. **209**, 1
- Deng, Z.-G., see Wen, Z., et al. **219**, 1
- Dennefeld, M., see Martin, J.M., et al. **208**, 39
- Dennefeld, M., see Vreux, J.M., et al. **226**, 421 (**81**, 353)
- Densing, R., see Krügel, E., et al. **211**, 419
- Densing, R., see Schmid-Burgk, J., et al. **215**, 150
- D'Ercole, A., see Ciotti, L. **215**, 347
- Dere, K.P., see Schmieder, B., et al. **213**, 402
- Derman, E., see Aslan, Z., et al. **208**, 385
- Desch, M.D., see Barrow, C.H. **213**, 495
- Désert, F.X., see Léger, A., et al. **213**, 351
- Deshpande, M.R., see Sen, A.K., et al. **217**, 307
- Destombes, J.L., see Gerin, M., et al. **224**, L24
- Destombes, J.L., see Gulkis, S., et al. **213**, 465
- Dettmar, R.-J., see Fürst, E., et al. **209**, 361
- Dettmar, R.-J., see Wagner, S.J., et al. **215**, 243
- Deubner, F.-L.: Mesogranulation: a convective phenomenon **216**, 259
- Deubner, F.-L., see Fleck, B. **224**, 245
- Deubner, F.-L., Fleck, B.: Dynamics of the solar atmosphere. I. Spatio-temporal analysis of waves in the quiet solar atmosphere **213**, 423
- Deul, E.R.: Large-scale properties of interstellar dust and gas in M33 **218**, 78
- Deul, E.R., Walker, H.J.: Responsivity variations in the IRAS survey **226**, 418 (**81**, 207)
- Dewdney, P.E., see Joncas, G., et al. **219**, 303
- Dewdney, P.E., see van der Werf, P.P., et al. **216**, 215
- d'Hendecourt, L.B., Jourdain de Muizon, M.: The discovery of interstellar carbon dioxide **223**, L5
- d'Hendecourt, L.B., see Bernard, J.P., et al. **220**, 245

- d'Hendecourt, L., see Léger, A., et al. **213**, 351  
d'Hendecourt, L., see Léger, A., et al. **216**, 148  
Di Martino, M., see Cellino, A., et al. **219**, 320  
Di Martino, M., Zappalà, V., Cellino, A., Barucci, M.A., Harris, A.W., Young, J.W., Zeigler, K.: The puzzling case of asteroid 8 Flora solved **223**, 352  
di Serego Alighieri, S., see D'Odorico, S., et al. **215**, 21  
di Serego Alighieri, S., see Perryman, M.A.C., et al. **215**, 195  
Diehl, R., see von Ballmoos, P., et al. **221**, 396  
Dieters, S., see Greenhill, J.G., et al. **208**, L1  
Dimarellis, E., Bertaux, J.L., Abergel, A.: Restoration of Vega-1 pictures of the nucleus of comet P/Halley: a new method revealing clear contours and jets **208**, 327  
Dimitrijević, M.S., Popović, M.M.: Estimates of Stark width along a homologous sequence **217**, 201  
Ding, M.D., Fang, C.: A semi-empirical model of sunspot penumbra **225**, 204  
Divan, L., see Zorec, J., et al. **210**, 279  
Dixon, A.M., Berger, M.A., Browning, P.K., Priest, E.R.: A generalization of the Woltjer minimum-energy principle **225**, 156  
Djurovic, D., Pâquet, P.: A 120-day oscillation in the solar activity and geophysical phenomena **218**, 302  
Doazan, V., Barylak, M., Rusconi, L., Sedmak, G., Thomas, R.N., Bourdonneau, B.: The first decade of envelope formation of 59 Cygni in the far UV and optical regions. II **210**, 249  
Dobaczewski, J., see Haensel, P., et al. **222**, 353  
Dobco, J.A., see Couteau, P., et al. **219**, 365 (**78**, 483)  
D'Odorico, S., di Serego Alighieri, S., Pettini, M., Magain, P., Nissen, P.E., Panagia, N.: A study of the interstellar medium in line to NGC 5128 from high resolution observations of the supernova 1986G **215**, 21  
Döbereiner, S., see Bender, R., et al. **217**, 35  
Dollfus, A.: Polarimetry of grains in the coma of P/Halley. II. Interpretation **213**, 469  
Dominiczak, R., see Stępień, K. **219**, 197  
Dominik, C., Gail, H.-P., Sedlmayr, E.: The size distribution of dust particles in a dust-driven wind **223**, 227  
Donas, J., see Buat, V., et al. **223**, 42  
Donati, J.-F., Semel, M., Praderie, F.: Zeeman-Doppler imaging of active stars. II. Numerical simulation and first observational results **225**, 467  
Donner, K.J., see Thomasson, M., et al. **211**, 25  
Dorfi, E.: Numerical studies on magnetic braking of interstellar clouds **225**, 507  
Dottori, H.A., see Copetti, M.V.F. **215**, 411 (**77**, 327)  
Downes, D., see Vivekanand, M., et al. **213**, 516  
Doyle, J.G.: An estimate of the total chromospheric, transition region and coronal radiative losses in late-type stars **214**, 258  
Doyle, J.G.: Hz versus X-ray luminosity in dwarf M stars **218**, 195  
Doyle, J.G., Butler, C.J., Byrne, P.B., Rodonò, M., Swank, J., Fowles, W.: Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XIII. IUE spectroscopy and photometry of II Pegasi during September 1986 **223**, 219  
Doyle, J.G., Byrne, P.B., van den Oord, G.H.J.: Ultraviolet flares on II Pegasi **224**, 153  
Doyle, J.G., see Byrne, P.B. **208**, 159  
Doyle, J.G., see Byrne, P.B., et al. **214**, 227  
Doyle, J.G., see Mathioudakis, M. **224**, 179  
Doyle, J.G., van den Oord, G.H.J., Butler, C.J.: Optical flares from the dwarf M star V 577 Mon (Gliese 234 AB = Ross 614) **208**, 208  
Dravins, D., see Pasquini, L., et al. **213**, 261  
Drechsel, H., Lorenz, R., Mayer, P.: Solution of light curves with third light contribution: the eclipsing binaries LY Aurigae and AH Cephei reconsidered **221**, 49  
Drechsel, H., see Boehnhardt, H., et al. **220**, 286  
Dreyer, P., see Frandsen, S., et al. **215**, 287  
Driessen, C., see Wamsteker, W., et al. **220**, 341 (**79**, 1)  
Drilling, J.S., see Husfeld, D., et al. **222**, 150  
Druesne, P., Borgnino, J., Martin, F., Ricort, G., Aime, C.: Speckle interferometric study of the solar granulation from centre to limb **217**, 229  
Drummond, J., see Cellino, A., et al. **219**, 320  
Drury, L.O'C., Markiewicz, W.J., Völk, H.J.: Simplified models for the evolution of supernova remnants including particle acceleration **225**, 179  
Dubreuil, D., see Ballet, J., et al. **211**, 217  
Duffett-Smith, P.J., see Woan, G. **208**, 381  
Duflot, M., see Fehrenbach, Ch., et al. **224**, 367 (**80**, 433)  
Dufton, P.L., Lennon, D.J.: The ultra-violet spectrum of the peculiar early-type supergiant, HD 157038 **211**, 397  
Dufton, P.L., see Conlon, E.S., et al. **224**, 65  
Dufton, P.L., see Lennon, D.J. **225**, 439  
Dulk, G.A., see Lecacheux, A., et al. **217**, 237  
Dumont, A.M., see Collin-Souffrin, S. **213**, 29  
Duncan, D.K., see Rutten, R.G.M., et al. **219**, 239  
Duncan, W.D., see Richardson, K.J., et al. **221**, 95  
Dunn, R.B., see von der Lühse, O., et al. **224**, 351  
Duquennoy, A., see Gillet, D., et al. **215**, 316  
Duquennoy, A., see Imbert, M., et al. **226**, 421 (**81**, 339)  
Duquennoy, A., see Mermilliod, J.-C., et al. **220**, 341 (**79**, 11)  
Durrer, R.: Gauge-invariant cosmological perturbation theory for collisionless matter: numerical results **208**, 1  
Durret, F.: A catalogue of extended ionized nebulosities around active galactic nuclei **226**, 418 (**81**, 253)  
Durret, F., see Bergeron, J., et al. **213**, 61  
Duruiseau, J.P., see Boulanger, J.L., et al. **217**, 375  
Duruiseau, J.P., see Boulanger, J.L., et al. **217**, 381  
Duschl, W.J.: Accretion disk models with a self-consistent viscosity parameter  $\alpha$  in convective zones **225**, 105  
Duschl, W.J., Livio, M.: "Mixed" mass transfer- and disk-instability models for dwarf nova eruptions **209**, 183  
Duschl, W.J., see Adam, P., et al. **218**, 205  
Duxbury, T.C., Callahan, J.D.: Phobos and Deimos astrometric observations from Mariner 9 **216**, 284  
Dvorak, R., Froeschlé, Ch., Froeschlé, Cl.: Stability of outer planetary orbits (P-types) in binaries **226**, 335  
Dyck, H.M., see Zuckerman, B. **209**, 119  
Dyson, J.E., Ghanbari, J.: The Wolf-Rayet nebula NGC 3199 – an interstellar snow plough? **226**, 270  
Ebert, R., see Baureis, P., et al. **225**, 405  
Echevarría, J., see Medina, F., et al. **220**, 313  
Edvardsson, B., see Tomkin, J., et al. **219**, L15  
Efimov, Y.S., see Belyakina, T.S., et al. **223**, 119  
Egret, D., see Wamsteker, W., et al. **220**, 341 (**79**, 1)  
Einasto, J., Haud, U.: Galactic models with massive corona. I. Method **223**, 89  
Einasto, J., see Haud, U. **223**, 95  
Eiroa, C., Casali, M.M.: The Serpens sources SVS 4 and FIRS 1: new results from infrared images **223**, L17

- Eiroa, C., Hodapp, K.-W.: Ice dust grains in the Serpens molecular cloud **210**, 345
- Eiroa, C., Hodapp, K.-W.: Near-infrared morphology of protoplanetary nebulae: the icy dust torus of Minkowski's Footprint (M1-92) **223**, 271
- El Eid, M.F., see Langer, N., et al. **224**, L17
- Elfhag, T., see Sandqvist, A., et al. **218**, 39
- Elpe, A., see Couteau, P., et al. **219**, 365 (78, 483)
- Ellinger, Y., see Pauzat, F. **216**, 305
- Ellis, R.S., see Hansen, L., et al. **211**, L9
- Elósegui, P., see Marcaide, J.M., et al. **211**, L23
- Emerich, C., see McConnell, J.C., et al. **225**, L9
- Emerson, D.T., see Salter, C.J., et al. **225**, 167
- Encrenaz, P.J., see Gulkis, S., et al. **213**, 465
- Encrenaz, P., see Gerin, M., et al. **224**, L24
- Engelsman, E.C., see van Genderen, A.M., et al. **223**, 376 (79, 263)
- Engels, D., Heske, A.: A reference catalogue of maser and thermal emission circumstellar SiO molecules **226**, 421 (81, 323)
- Engels, D., see Reimers, D., et al. **218**, 71
- Engin, S., see Hack, M., et al. **225**, 143
- Engelbrecht, C.A., see Byrne, P.B., et al. **214**, 227
- Epchtein, N., see Le Bertre, T., et al. **225**, 417
- Epifani, M., see Masi, S., et al. **226**, 357
- Erdelyi-Mendes, M., Barbuy, B.: Oscillator strengths and damping constants from the solar spectrum at  $\lambda\lambda$  830–870 nm **224**, 363 (80, 229)
- Erdelyi-Mendes, M., see Barbuy, B. **214**, 239
- Ertl, T., see Finkbeiner, B., et al. **225**, 479
- Esteban, C., see Manchado, A., et al. **214**, 139
- Evans, D.W.: Photometric calibration of the APM Proper Motion Project **218**, 342 (78, 249)
- Fabbri, R., Lucchin, F., Matarrese, S.: The effect of primordial perturbations on the extragalactic infrared background **219**, 7
- Fabbri, R., see Xu Chongming, et al. **220**, 30
- Fahr, H.J., see Rucinski, D. **224**, 290
- Fairall, A.P., Vettolani, G., Chincarini, G.: A wide angle redshift survey of the Hydra-Centaurus region **218**, 343 (78, 269)
- Fairbank, W.M., see Amaldi, E., et al. **216**, 325
- Faires, L.M., see Biémont, E., et al. **209**, 391
- Fang, C., see Ding, M.D. **225**, 204
- Fanti, C., Fanti, R., Parma, P., Venturi, T., Schilizzi, R.T., Nan Rendong, Spencer, R.E., Muxlow, T.W.B., van Breugel, W.: Three prototype compact steep spectrum radio sources **217**, 44
- Fanti, R., see Fanti, C., et al. **217**, 44
- Fanti, R., see Spangler, S., et al. **209**, 315
- Faraggiana, R., see Gerbaldi, M., et al. **226**, 415 (81, 127)
- Faraggiana, R., see Ramella, M., et al. **209**, 233
- Faraggiana, R., see van 't Veer-Menneret, C., et al. **224**, 171
- Faraggiana, R.: Heavy elements in the 2000–3000 Å range of four Ap stars **224**, 162
- Farinella, P., Carpino, M., Froeschlé, Ch., Froeschlé, Cl., Gonczi, R., Knežević, Z., Zappalà, V.: The ages of asteroid families **217**, 298
- Farinella, P., see Cellino, A., et al. **219**, 320
- Fasano, G., Bonoli, C.: Isophotal twisting in isolated elliptical galaxies **223**, 377 (79, 291)
- Faurobert-Scholl, M., Frisch, H.: Asymptotic analysis of resonance polarization and escape probability approximations **219**, 338
- Fedorova, A.V., see Sarna, M.J. **208**, 111
- Fegan, D.J., Cawley, M.F., Gibbs, K., Lamb, R.C., Lewis, D.A., Porter, N.A., Reynolds, P.T., Smyth, G., Weekes, T.C.: Search for a 12.59 ms pulsar in Cygnus X-3 **211**, L1
- Fehrenbach, Ch., Duflot, M., Burnage, R., Mannone, C., Peton, A., Genty, V.: *Erratum*: Radial velocities. II. Ground based measurements for Hipparcos **224**, 367 (80, 433)
- Feinstein, A., Vázquez, R.A.: New *UBVRI* photoelectric photometry in the field of the open cluster NGC 2467 **215**, 411 (77, 321)
- Feldman, P.A., see Linsky, J.L., et al. **211**, 173
- Felli, M., Massi, M., Churchwell, E.: VLBI observations of  $\theta^1$  Orionis A **217**, 179
- Fenkart, R.: Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities. I **218**, 342 (78, 217)
- Fenkart, R.: Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities. II (Synopsis of 25 years Basle Halo Program; II: Plaut I, NGC 6171, SA 158, M13) **220**, 342 (79, 51)
- Fenkart, R.: Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities (Synopsis of 25 years Basle Halo Program. III. [*RGU*+*UBV*]: SA 82, SA 133, SA 57, SA 54) **223**, 382 (80, 89)
- Fenkart, R.: Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric Space Densities (Synopsis of 25 years Basle Halo Program). IV. SA 107 **226**, 418 (81, 187)
- Feretti, L., see Dallacasa, D., et al. **223**, 379 (79, 391)
- Feretti, L., see Venturi, T., et al. **213**, 49
- Ferlet, R., see Beust, H., et al. **223**, 304
- Ferlet, R., see Lagrange-Henri, A.M., et al. **215**, L5
- Ferrari-Toniolo, M., see Tapia, M., et al. **225**, 488
- Ferraz-Mello, S., Sato, M.: The very-high-eccentricity asymmetric expansion of the disturbing function near resonances of any order **225**, 541
- Ferrini, F., see Barsella, B., et al. **209**, 349
- Ferrini, F., see Galli, D. **218**, 31
- Ferriz-Mas, A., Schüssler, M., Anton, V.: Dynamics of magnetic flux concentrations: the second-order thin flux tube approximation **210**, 425
- Fiebig, D., Güsten, R.: Strong magnetic fields in interstellar H<sub>2</sub>O maser clumps **214**, 333
- Fiebig, D., see Güsten, R. **215**, 218
- Figon, P., see Casoli, F., et al. **224**, 31
- Filippi, S., see Busarello, G., et al. **213**, 80
- Finkbeiner, B., Herold, H., Ertl, T., Ruder, H.: Effects of radiation damping on particle motion in pulsar vacuum fields **225**, 479
- Finkenzeller, U., see Tjin A Djie, H.R.E., et al. **218**, 338 (78, 1)
- Fink, H.H., see Brinkmann, W., et al. **221**, 385
- Finzi, A., Harpaz, A.: Non-baryonic matter from the halo and the solar neutrino problem **211**, 441
- Fischerström, C., see Gahm, G.F., et al. **211**, 115
- Fisher, W.A., see Hill, G., et al. **211**, 81
- Fisher, W.A., see Hill, G., et al. **218**, 152
- Fitzpatrick, E.L., see Walborn, N.R., et al. **219**, 229
- Fleck, B., Deubner, F.-L.: Dynamics of the solar atmosphere. II. Standing waves in the solar chromosphere **224**, 245
- Fleck, B., see Deubner, F.-L. **213**, 423
- Floquet, M., Hubert, A.M., Maillard, J.P., Chauville, J., Chatzichristou, H.: Search for cool giant companions of the Be stars  $\zeta$  Tauri and KX Andromedae **214**, 295

- Floquet, M., see Gerbaldi, M., et al. 226, 415 (81, 127)
- Floquet, M., see van 't Veer-Menneret, C., et al. 224, 171
- Focardi, P., see Vettolani, G., et al. 220, 344 (79, 147)
- Foglietti, V., see Amaldi, E., et al. 216, 325
- Foing, B.H., Crivellari, L., Vladilo, G., Rebolo, R., Beckmann, J.E.: Chromospheres of late-type active and quiescent dwarfs. II. An activity index derived from profiles of the Ca II  $\lambda$  8498 Å and  $\lambda$  8542 Å triplet lines 224, 362 (80, 189)
- Foing, B.H., see de Jager, C., et al. 211, 157
- Foing, B.H., see Rebolo, R., et al. 224, 362 (80, 135)
- Forbes, D.: Photometry and spectroscopy of stars in northern H II regions 217, 393 (77, 439)
- Forster, J.R., Caswell, J.L.: The spatial relationship of OH and H<sub>2</sub>O masers 213, 339
- Forti, G.: The motion of several periodic comets 215, 381
- Fouqué, P., see Paturel, G., et al. 224, 366 (80, 299)
- Fowles, W., see Doyle, J.G., et al. 223, 219
- Fox, K., see Malhotra, R., et al. 221, 348
- Foy, F., see Sivagnanam, P., et al. 211, 341
- Fraix-Burnet, D., Le Borgne, J.-F., Nieto, J.-L.: Optical polarization of the M87 jet 224, 17
- Fraix-Burnet, D., Nieto, J.-L., Poulain, P.: Detection of optical polarization in the 3C 66 B jet 221, L1
- Fraix-Burnet, D., Nieto, J.-L., Roques, S.: Image deconvolution applied to the 3C 273 jet 217, 387
- Franco, G.A.P.: Estimation of stellar intrinsic colours, distances and colour excesses based on the Strömgren and H $\beta$  photometry of 804 B, A, and F stars in 10 selected areas 218, 339 (78, 105)
- Franco, G.A.P.: High latitude molecular clouds: distances derived from accurate photometry 223, 313
- Franco, G.A.P.: Strömgren and H $\beta$  photometry of stars earlier than G0 in the Southern Coalsack direction 215, 410 (77, 227)
- Franco, G.A.P.: Strömgren and H $\beta$  photometry of stars earlier than G0 in 5 areas containing high latitude molecular clouds 223, 383 (80, 127)
- Franco, G.A.P.: The Southern Coalsack: extinction and distance 215, 119
- Frandsen, S., Dreyer, P., Kjeldsen, H.: Stellar photometric stability. I. The open clusters Melotte 105, NGC 2660 and NGC 4755 215, 287
- François, P., see Spite, F., et al. 210, 25
- Frasca, S., see Amaldi, E., et al. 216, 325
- Frerking, M.A., see Gulkis, S., et al. 213, 465
- Friberg, P., see Liljeström, T., et al. 210, 337
- Fricke, K.J., Kollatschny, W.: The group environment of Seyfert galaxies. II. Spectrophotometry of galaxies in groups 213, 521 (77, 75)
- Fricke, K.J., see Fritze-v.-Alvensleben, U., et al. 224, L1
- Fricke, K.J., see Kollatschny, W. 219, 34
- Fridlund, C.V.M., Sandqvist, A., Nordh, H.L., Olofsson, G.: The L 1551 IRS 5 CO bipolar outflow: acceleration and origin 213, 310
- Fridlund, C.V.M., White, G.J.: High signal/noise <sup>13</sup>CO observations of the bipolar outflow in L 1551 223, L13
- Friedjung, M., see Andrade, A.A. 224, 187
- Fried, J.W., see Stickel, M., et al. 223, 383 (80, 103)
- Fried, J.W., see Stickel, M., et al. 224, L27
- Frisch, H., see Faurobert-Scholl, M. 219, 338
- Fritze-v.-Alvensleben, U., Krüger, H., Fricke, K.J., Loose, H.-H.: Chemical evolution of high redshift galaxies 224, L1
- Fritz, K.D.: Synchrotron emission spectra from shockwaves in active galactic nuclei: an energy and space dependent diffusion coefficient 214, 14
- Fröhlich, C., Pap, J.: Multi-spectral analysis of total solar irradiance variations 220, 272
- Froeschlé, Ch., see Dvorak, R., et al. 226, 335
- Froeschlé, Ch., see Farinella, P., et al. 217, 298
- Froeschlé, Cl., see Dvorak, R., et al. 226, 335
- Froeschlé, Cl., see Farinella, P., et al. 217, 298
- Frueh, M., see Breger, M., et al. 214, 209
- Fryxell, B.A., see Müller, E., et al. 220, 167
- Fuentes, F.J., see Navarro, R., et al. 208, 374
- Fuentes, F.J., see Navarro, R., et al. 219, 362
- Fuente, A., Martín-Pintado, J., Alcolea, J., Barcia, A.: Monitoring of the SiO maser emission in W 51-IRS 2: evidence for high velocity cloudlets ejected from young stars? 223, 321
- Fürst, E., Hummel, E., Reich, W., Sofue, Y., Sieber, W., Reif, K., Dettmar, R.-J.: A study of the composite supernova remnant G 18.95-1.1 209, 361
- Fürst, E., Reich, W., Kühr, H., Stickel, M.: The nature of the central source of the supernova remnant G 179.0+2.7 223, 66
- Fürst, E., see Güdel, M., et al. 220, L5
- Fürst, E., see Schlickeiser, R. 219, 192
- Fugmann, W.: Galaxies near distant quasars: observational evidence for statistical gravitational lensing (Part II) 222, 45
- Fuhrmann, K.: Element identifications in IUE spectra of chemically peculiar stars: the Pt-Au-Hg sequence 217, 391 (77, 345)
- Fuhrmann, K.: The IUE-UV spectrum of the CP2 star HR 465 224, 367 (80, 399)
- Fulle, M.: Evaluation of cometary dust parameters from numerical simulations: comparison with an analytical approach and the role of anisotropic emissions 217, 283
- Fusi Pecci, F., see Buonanno, R., et al. 216, 80
- Gabler, A., see Gabler, R., et al. 226, 162
- Gabler, R., Gabler, A., Kudritzki, R.P., Puls, J., Pauldrach, A.W.A.: Unified NLTE model atmospheres including spherical extension and stellar winds: method and first results 226, 162
- Gabriel, M.: The thermal surface boundary condition for stellar pulsations 208, 122
- Gabriel, M.: The  $D_{\text{H}}$  values and the structure of the solar core 226, 278
- Gahm, G.F., Fischerström, C., Liseau, R., Lindroos, K.P.: Long- and short-term variability of the T Tauri Star RY Lupi 211, 115
- Gail, H.-P., see Dominik, C., et al. 223, 227
- Gallego, J.D., see Alcolea, J., et al. 211, 187
- Galli, D., Ferrini, F.: A model of spiral-galaxy evolution. II. Toward an understanding of the Hubble sequence 218, 31
- Galloway, E.T., Herbst, E.: A refined study of the rate of the N<sup>+</sup> + H<sub>2</sub> → NH<sup>+</sup> + H reaction under interstellar conditions: implications for NH<sub>3</sub> production 211, 413
- Garay, G., Gathier, R., Rodriguez, L.F.: Radio recombination line observations of compact planetary nebulae 215, 101
- Garcia, L.G., see Brandi, E., et al. 215, 331
- Garcia-Lario, P., see Manchado, A., et al. 218, 267
- Garcia-Lario, P., see Manchado, A., et al. 214, 139
- Garcia-Lario, P., see Pérez, E., et al. 215, 262
- Garcia-Lopez, R., see Rebolo, R., et al. 224, 362 (80, 135)
- Gargaud, M., McCarroll, R., Opradole, L.: State selective excitation of O III by charge transfer of O IV with H 208, 251
- Garilli, B., see Vettolani, G., et al. 220, 344 (79, 147)



- Garmany, C.D., see St-Louis, N., et al. **226**, 249  
 Garmany, C.D., see Willis, A.J., et al. **215**, 410 (77, 269)  
 Garnier, R., see Westerlund, B.E. **218**, 341 (78, 203)  
 Garrido, R., see Breger, M., et al. **214**, 209  
 Garrido, R., see Grewing, M., et al. **223**, 172  
 Gaspani, A., see Bossi, M., et al. **222**, 117  
 Gathier, R., Pottasch, S.R.: Properties of planetary nebulae. II. Central star evolution **209**, 369  
 Gathier, R., see Garay, G., et al. **215**, 101  
 Gaylard, M., see Braz, M.A., et al. **217**, 393 (77, 465)  
 Geballe, T.R., Baas, F., Wade, R.: Carbon monoxide along the line of sight to galactic center infrared sources **208**, 255  
 Geballe, T.R., see Roelfsema, P.R., et al. **222**, 247  
 Geballe, T.R., see van der Veen, W.E.C.J., et al. **216**, L1  
 Geballe, T.R., see van der Veen, W.E.C.J., et al. **226**, 108  
 Geffert, M., Aurière, M., Ilovaisky, S.A., Terzan, A.: Accurate position for the globular cluster X-ray source M15: AC211/X2127+119 **209**, 423  
 Geffert, M., see Brosche, P., et al. **211**, 239  
 Geffert, M., Tucholke, H.-J., Walter, H.G., Moreno, M.A., Ivanova, V., Sinachopoulos, D.: Optical positions of 21 radio sources in the Brorfelde system **224**, 323  
 Gehrels, T., see van Houten-Groeneveld, I., et al. **224**, 299  
 Geiss, J., see von Steiger, R. **225**, 222  
 Gemünd, H.-P., see Chini, R., et al. **216**, L5  
 Gemünd, H.-P., see Chini, R., et al. **221**, L3  
 Genty, V., see Fehrenbach, Ch., et al. **224**, 367 (80, 433)  
 Georgelin, Y.P., see Laval, A., et al. **208**, 230  
 Georgelin, Y., see Adam, G., et al. **208**, L15  
 Gérard, E., Bockelée-Morvan, D., Bourgois, G., Colom, P., Crovisier, J.: Observations of the OH radio lines in comet P/Halley 1986 III **217**, 392 (77, 379)  
 Gerbaldi, M., Floquet, M., Faraggiana, R., van't Veer-Menneret, C.: Behaviour of OI triplet  $\lambda$  7773. II. Ap stars **226**, 415 (81, 127)  
 Gerbaldi, M., see Ramella, M., et al. **209**, 233  
 Gerbaldi, M., see van't Veer-Menneret, C., et al. **224**, 171  
 Gerbault, A., see Leblanc, Y., et al. **217**, 392 (77, 425)  
 Gerbault, A., see Leblanc, Y., et al. **220**, 344 (79, 154)  
 Gerbault, F., see Goebel, J., et al. **222**, L5  
 Gerbier, G., see Chardin, G. **210**, 52  
 Gérin, M., Combes, F., Encrenaz, P., Turner, B., Wootten, A., Bogey, M., Destombes, J.L.: A search for HCOCN in molecular clouds **224**, L24  
 Gérin, M., see Le Boulrot, J., et al. **219**, 279  
 Gershberg, R.E., see Belyakina, T.S., et al. **223**, 119  
 Ghanbari, J., see Dyson, J.E. **226**, 270  
 Ghosh, S.K., see Iyengar, K.V.K., et al. **221**, 250  
 Giard, M., Pajot, F., Lamarre, J.M., Serra, G., Caux, E.: The galactic emission in the 3.3  $\mu$ m aromatic feature. I. Observations **215**, 92  
 Giavalisco, M., see Calzetti, D., et al. **226**, 1  
 Gibbs, K., see Fegan, D.J., et al. **211**, L1  
 Gibbs, P., see Lagerkvist, C.-I., et al. **219**, 366 (78, 519)  
 Gieren, W.P.: Improved orbital parameters for the binary Cepheid T Monocerotis **216**, 135  
 Gieren, W.P.: Towards a reconciliation of Cepheid masses **225**, 381  
 Giler, M., Osborne, J.L., Ptuskin, V.S., Szabelska, B., Wdowczyk, J., Wolfendale, A.W.: Distributed processes as contributors to the acceleration of cosmic rays **217**, 311  
 Giles, A.B., see Greenhill, J.G., et al. **208**, L1  
 Giles, K., see Adams, N.G., et al. **220**, 269  
 Gillet, D., Burki, G., Crowe, R.A.: Shock waves of large amplitude in the atmospheres of RR Lyrae stars? **225**, 445  
 Gillet, D., Duquennoy, A., Bouchet, P., Gouiffes, C.: Shock phenomena in the atmosphere of the RV Tauri star, R Scuti **215**, 316  
 Gillet, D., Lafon, J.-P.J., David, P.: Radiative shocks in atomic and molecular stellar atmospheres. III. The shock wave velocity problem in Mira stars **220**, 185  
 Gillet, D., Mouchet, M., North, P.: The H $\alpha$  profile of Algol **219**, 219  
 Gillet, D., see Crowe, R. **211**, 365  
 Gilmozzi, R., see Walborn, N.R., et al. **219**, 229  
 Giménez, A., see Claret, A. **226**, 415 (81, 1)  
 Giménez, A., see Claret, A. **226**, 415 (81, 37)  
 Giménez, A., see Clausen, J.V., et al. **215**, 410 (77, 257)  
 Ginestet, N., see Pédoussaut, A., et al. **219**, 364 (78, 441)  
 Giommi, P., see Beuermann, K., et al. **219**, L7  
 Giommi, P., see Parmar, A.N., et al. **222**, 96  
 Giovanardi, C., Palla, F.: Revision and extension to low temperature of numerical estimates of the electron collisional rates for atomic hydrogen **215**, 409 (77, 157)  
 Giovanardi, C., see Palla, F. **223**, 267  
 Giovannini, G., see Dallacasa, D., et al. **223**, 379 (79, 391)  
 Giovannini, G., see Venturi, T., et al. **213**, 49  
 Giovannozzi, E., see Masi, S., et al. **226**, 357  
 Giridhar, S., see Arellano Ferro, A., et al. **214**, 123  
 Gispert, R., see Pajot, F., et al. **223**, 107  
 Giuliano, M., see Papoular, R., et al. **217**, 204  
 Giuricin, G., Mardirossian, F., Mezzetti, M.: Radio continuum emission and arm classification in spiral galaxies **208**, 27  
 Gleizes, F., Acker, A., Stenholm, B.: Zanstra temperatures of the central stars of southern planetary nebulae **222**, 237  
 Gleizes, F., see Tyenda, R., et al. **213**, 520 (77, 39)  
 Gochermann, J., Goudfrooij, P., Schmidt-Kaler, Th.: The galactic foreground reddening of SN 1987 A **213**, 333  
 Goebel, J., Volk, K., Walker, H., Gerbault, F., Cheeseman, P., Self, M., Stutz, J., Taylor, W.: A Bayesian classification of the IRAS LRS Atlas **222**, L5  
 Gölbasi, O., see Aslan, Z., et al. **208**, 385  
 Götz, M., see Greve, A., et al. **215**, 113  
 Goicoechea, L.J., Martin-Mirones, J.M.: The existence of very large-scale structures in the universe **221**, 197  
 Golbasi, O., see Chollet, F., et al. **226**, 418 (81, 285)  
 Goldbach, C., Martin, M., Nollez, G.: Oscillator strength measurements in the vacuum-ultraviolet. IV. Weak lines of neutral carbon **221**, 155  
 Goldberg, E.P., see Straižys, V., et al. **222**, 82  
 Goldwurm, A., see Dean, A.J., et al. **219**, 358  
 Gómez-González, J., see Bachiller, R., et al. **218**, 252  
 Gómez-González, J., see Bujarrabal, V., et al. **219**, 256  
 Gómez-González, J., see Planesas, P., et al. **216**, 1  
 Gomez, T., see Peniche, R., et al. **209**, 59  
 Gonczi, R., see Farinella, P., et al. **217**, 298  
 Gonin, J.C., see Millet, J., et al. **214**, 327  
 González, R., see Walborn, N.R., et al. **219**, 229  
 González-Riestra, R., see Rego, M., et al. **223**, 380 (79, 443)  
 Goossens, M., see Hermans, D. **225**, 569  
 Gorbanev, Ju.M., see Moskalenko, E.I., et al. **223**, 141  
 Goss, W.M., see Roelfsema, P.R., et al. **222**, 247  
 Goss, W.M., see van der Werf, P.P. **224**, 209  
 Goss, W.M., see van der Werf, P.P., et al. **216**, 215  
 Gottardi, M., see Boer, M., et al. **214**, 148  
 Goudfrooij, P., see Gochermann, J., et al. **213**, 333

- Goudfrooy, P., see van Genderen, A.M., et al. **223**, 376 (79, 263)
- Goudis, C., see Meaburn, J., et al. **225**, 497
- Gouguenheim, L., see Martin, J.M., et al. **208**, 39
- Gouguenheim, L., see Paturel, G., et al. **224**, 366 (80, 299)
- Gouiffes, C., see Gillet, D., et al. **215**, 316
- Gouiffes, C., see Le Bertre, T., et al. **225**, 417
- Goupil, M.J., see Vauclair, G., et al. **215**, L17
- Gräve, R., see Beck, R., et al. **222**, 58
- Gratton, R.G.: Abundance of manganese in metal-poor stars **208**, 171
- Gratton, R.G., D'Antona, F.: HD 39853: a high velocity K 5 III star with an exceptionally large Li content **215**, 66
- Gratton, R.G., Ortolani, S.: Metal abundances in metal-poor globular clusters **211**, 41
- Gratton, R.G., see Ortolani, S. **223**, 375 (79, 155)
- Greenberg, J.M., see Barsella, B., et al. **209**, 349
- Greenberg, J.M., see Grim, R.J.A., et al. **218**, 341 (78, 161)
- Greenhill, J.G., Giles, A.B., Sharma, D.P., Dieters, S., Sood, R.K., Thomas, J.A., Waldron, L., Manchanda, R.K., Carli, R., Hammer, P., Kendziorra, E., Staubert, R., Bazzano, A., Ubertini, P., La Padula, C.: Resumed spin-up in GX 1+4 **208**, L1
- Green, D.A.: The DRAO Galactic plane survey. I.  $l=140^\circ$ ,  $b=0^\circ$  **218**, 343 (78, 277)
- Gregorini, L., Bondi, M.: High resolution observations of the narrow angle tail radio galaxy in Abell 115 **225**, 333
- Gregorini, L., Messina, A., Vettolani, G.: Early-type galaxies with dust lanes: observations of a northern sample **224**, 363 (80, 239)
- Gregorini, L., see Spangler, S., et al. **209**, 315
- Gregorini, L., see Vettolani, G., et al. **220**, 344 (79, 147)
- Gregorio Hetem, J.C., Sanzovo, G.C., Lépine, J.R.D.: *Erratum*: Star counts and IRAS sources in southern dark clouds **223**, 380 (79, 452)
- Gregorio Hetem, J.C., see Braz, M.A., et al. **217**, 393 (77, 465)
- Grevesse, N., Blackwell, D.E., Petford, A.D.: Revision of the absolute scale of the Oxford Ti I oscillator strengths and the solar titanium abundance **208**, 157
- Grevesse, N., see Biémont, E., et al. **209**, 391
- Grevesse, N., see Biémont, E., et al. **222**, 307
- Greve, A., McKeith, C.D., Barnett, E.W., Götz, M.: Extinction towards the Orion nebula derived from  $P\gamma/H\delta$  and  $[SII]$   $1.04\ \mu\text{m}/4071\ \text{\AA}$  line ratios **215**, 113
- Greve, A., see Booth, R.S., et al. **216**, 315
- Grewing, M., Bianchi, L., Garrido, R.: Properties of the components of the UZ Librae system **223**, 172
- Grewing, M., see Bässgen, M. **218**, 273
- Griffin, R. & R.: Derivation of photographic characteristic curves with a birefringent calibration device **222**, 358
- Griffin, R.E.M., Holweger, H.: An abundance analysis of the Hyades giant  $\gamma$  Tauri: an exercise in caution **214**, 249
- Grigor'eva, S.I., see Berezinsky, V.S. **210**, 462
- Grim, R.J.A., Greenberg, J.M., de Groot, M.S., Baas, F., Schutte, W.A., Schmitt, B.: Infrared spectroscopy of astrophysical ices: new insights in the photochemistry **218**, 341 (78, 161)
- Groenewegen, M.A.T., Lamers, H.J.G.L.M.: The winds of O-stars. I. An analysis of the UV line profiles with the SEI method **223**, 378 (79, 359)
- Groenewegen, M.A.T., Lamers, H.J.G.L.M., Pauldrach, A.W.A.: The winds of O-stars. II. The terminal velocities of stellar winds of O-type stars **221**, 78
- Groote, D., Heber, U., Jordan, S.: Discovery of two bright low-redshift quasars by the Hamburg Quasar Survey **223**, L1
- Groote, D., see Hunger, K., et al. **224**, 57
- Groote, D., see Reimers, D., et al. **218**, 71
- Grossmann-Doerth, U., Schüssler, M., Solanki, S.K.: Stokes  $V$  asymmetry and shift of spectral lines **221**, 338
- Gross, B.D., see Linsky, J.L., et al. **211**, 173
- Groth, H.G., see Kudritzki, R.P., et al. **226**, 235
- Grygar, J., see Belyakina, T.S., et al. **223**, 119
- Guarini, G., see Masi, S., et al. **226**, 357
- Güdel, M., Benz, A.O.: Broad-band spectrum of dMe star radio emission **211**, L5
- Güdel, M., Benz, A.O., Bastian, T.S., Fürst, E., Simnett, G.M., Davis, R.J.: Broadband spectral observation of a dMe star radio flare **220**, L5
- Güdel, M., Benz, A.O., Catala, C., Praderie, F.: Radio continuum emission from the pre-main sequence Herbig Ae star AB Aurigae **217**, L9
- Güdel, M., see Benz, A.O. **218**, 137
- Guélin, M., see Cernicharo, J., et al. **222**, L1
- Guélin, M., see Mauersberger, R., et al. **223**, 376 (79, 217)
- Guélin, M., see Mikami, H., et al. **217**, L5
- Güsten, R., Fiebig, D.: *Erratum*: A multi-line  $\text{NH}_3$  study of the M 17SW molecular cloud **215**, 218
- Güsten, R., see Cox, P., et al. **209**, 382
- Güsten, R., see Fiebig, D. **214**, 333
- Güsten, R., see Neckel, T., et al. **210**, 378
- Guidi, I., see Masi, S., et al. **226**, 357
- Guilloteau, S., see Nercessian, E., et al. **210**, 225
- Gulati, R.K., Malagnini, M.L., Morossi, C.: Empirical temperature calibrations for early-type stars **223**, 382 (80, 73)
- Gulkis, S., Batelaan, P.D., Frerking, M.A., Klein, M.J., Kuiper, T.B.H., Pickett, H.M., Schaefer, M.M., Wannier, P., Bockelée-Morvan, D., Crovisier, J., Encrenaz, P.J., Zimmermann, P., Destombes, J.L.: Search for water in comet P/Halley at 380 GHz **213**, 465
- Guo Xinjian, see Mao Wei, et al. **215**, 190
- Guo Zi-he, see Breger, M., et al. **214**, 209
- Guo, Z.H., see Huang, L., et al. **219**, 364 (78, 431)
- Gustafson, B.Å.S.: Geminid meteoroids traced to cometary activity on Phaethon **225**, 533
- Gustafsson, B., see Tomkin, J., et al. **219**, L15
- Haas, M., see Leinert, Ch. **221**, 110
- Habel, R., see Amaldi, E., et al. **216**, 325
- Haberl, F., see Brinkmann, W., et al. **221**, 385
- Habets, G.M.H.J., see Waters, L.B.F.M., et al. **223**, 207
- Habets, G.M.H.J., Zwaan, C.: Asynchronous rotation in close binary systems with circular orbits **211**, 56
- Habing, H.J., see Pijpers, F.P. **215**, 334
- Habing, H.J., see te Lintel Hekkert, P., et al. **219**, 364 (78, 399)
- Habing, H.J., see van der Veen, W.E.C.J., et al. **226**, 108
- Habing, H.J., see van der Veen, W.E.C.J., et al. **216**, L1
- Habing, H.J., see Zijlstra, A.A., et al. **217**, 157
- Hack, M., Engin, S., Yilmaz, N.: A study of the ultraviolet spectrum of VV Cephei **225**, 143
- Hadiyanto Nitihardjo, G., see van Genderen, A.M. **221**, 230
- Hadiyanto Nitihardjo, G., see van Genderen, A.M. **223**, 379 (79, 401)

- Haefner, R.: PG 1550+131: a short periodic precataclysmic binary with very deep eclipses **213**, L15
- Haensel, P., Zdunik, J.L., Dobaczewski, J.: Composition and equation of state of cold catalyzed matter below neutron drip **222**, 353
- Haensel, P., Zdunik, J.L., Schaeffer, R.: Phase transitions in dense matter and radial pulsations of neutron stars **217**, 137
- Hage, J.I., see Hovenier, J.W. **214**, 391
- Hagel, J., Kallrath, J.: Integration theory for the elliptic restricted three-body problem **222**, 344
- Hagen, H.J., see Reimers, D., et al. **218**, 71
- Hagström, M., see Booth, R.S., et al. **216**, 315
- Haikala, L.K., Laureijs, R.J.: CO and IR in L1228: extended bipolar molecular outflow and strongly self-absorbed  $^{12}\text{CO}$  emission **223**, 287
- Haisch, B.M.: A relation between Balmer and soft X-ray emission in flares **219**, 317
- Hakkila, J.: Intermediate-infrared excesses of barium stars **213**, 204
- Halenka, J.: Atomic partition functions for manganese I-III and cobalt I-III **226**, 421 (81, 303)
- Hall, C.J., see Dean, A.J., et al. **219**, 358
- Hamann, W.-R., see Schmutz, W., et al. **210**, 236
- Hameury, J.M., Lasota, J.P.: X-ray emission from  $\gamma$ -ray bursters **211**, L15
- Hamilton, W.O., see Amaldi, E., et al. **216**, 325
- Hammer, F., Le Fèvre, O., Jones, J., Rigaut, F., Soucail, G.: Probable additional gravitational images related to the CI 2244-02 arc and  $B, V, R$  photometry of the cluster core **208**, L7
- Hammer, F., Rigaut, F.: Giant luminous arcs from lensing: determination of the mass distribution inside distant cluster cores **226**, 45
- Hammer, P., see Greenhill, J.G., et al. **208**, L1
- Hannaford, P., see Biémont, E., et al. **222**, 307
- Hansen, L., Jørgensen, H.E., Nørgaard-Nielsen, H.U., Ellis, R.S., Couch, W.J.: A supernova at  $z=0.28$  and the rate of distant supernovae **211**, L9
- Hanslmeier, A., see Münzer, H., et al. **213**, 431
- Hansson, B., see Booth, R.S., et al. **216**, 315
- Hanuschik, R.W., Thimm, G., Seidensticker, K.J.: Absolute fluxes for Supernova 1987A. II. Days 51 to 157 **220**, 153
- Hao, P.J., see Xie, G.Z., et al. **220**, 89
- Harding, J.S.J., see Dean, A.J., et al. **219**, 358
- Harju, J.: HCN and HNC observations towards dark clouds **219**, 293
- Harju, J., see Mauersberger, R., et al. **226**, L5
- Harju, J., see Menten, K.M., et al. **223**, 258
- Harnden, F.R., Jr., see Pasquini, L., et al. **218**, 187
- Harnett, J.I., Beck, R., Buczylowski, U.R.: The magnetic field of NGC 6946 **208**, 32
- Harnett, J.I., Haynes, R.F., Klein, U., Wiebeinski, R.: Polarized radio emission from NGC 4945 **216**, 39
- Harpaz, A., see Finzi, A. **211**, 441
- Harper, D., Taylor, D.B., Sinclair, A.T.: Analysis of the orbits of Titan, Hyperion, and Iapetus by numerical integration **221**, 359
- Harrison, R.A., Sime, D.G.: Comments on coronal mass ejection onset studies **208**, 274
- Harris, A.W., see Di Martino, M., et al. **223**, 352
- Hart, L., see Cersosimo, J.C., et al. **208**, 239
- Hartmann, D., see van Genderen, A.M., et al. **223**, 376 (79, 263)
- Hartquist, T.W., see Havnes, O., et al. **217**, L13
- Harwit, M., see Schlickeiser, R., et al. **216**, 197
- Hashimoto, M., Nomoto, K., Shigeyama, T.: Explosive nucleosynthesis in supernova 1978 A **210**, L5
- Hashimoto, M., see Różycka, M., et al. **208**, 69
- Hasinger, G., see Schulz, N.S., et al. **225**, 48
- Hasinger, G., van der Klis, M.: Two patterns of correlated X-ray timing and spectral behaviour in low-mass X-ray binaries **225**, 79
- Haslam, C.G.T., see Salter, C.J., et al. **220**, 42
- Hassall, B.J.M., see Wamsteker, W., et al. **220**, 341 (79, 1)
- Hauck, B., Slettebak, A.: Effects of stellar rotation on the Geneva photometric system **214**, 153
- Haud, U., Einasto, J.: Galactic models with massive corona. II. Galaxy **223**, 95
- Haud, U., see Einasto, J. **223**, 89
- Haug, E.: Efficient computation of electron-electron bremsstrahlung emission in a hot thermal plasma **218**, 330
- Hauschildt, P.H., Shaviv, G., Wehrse, R.: An atlas of calculated continuum energy distributions for supernovae of type II **213**, 522 (77, 115)
- Hauschildt, P.H., Shaviv, G., Wehrse, R.: Theoretical models for the continuum and colors of SN 1979 C and SN 1980 K **210**, 262
- Havnes, O., Hartquist, T.W., Pilipp, W.: Wave propagation in dusty cool stellar envelopes **217**, L13
- Hawley, S.L., Panov, K.P., Pettersen, B.R., Sundland, S.R.: The flare activity of the red dwarf binary Gliese 277 AB **220**, 218
- Hawley, S.L., see Pettersen, B.R. **217**, 187
- Haynes, R.F., see Harnett, J.I., et al. **216**, 39
- Haynes, R.F., see Klein, U., et al. **211**, 280
- Hazen, M.L., see Andersen, J., et al. **219**, 142
- Hearn, A.G., see Korevaar, P. **220**, 177
- Hearn, A.G., see Korevaar, P. **224**, 141
- Hearn, A.G., see Pijpers, F.P. **209**, 198
- Heaton, B.D., Little, L.T., Bishop, I.S.: The "ultracompact hot core" of G 34.3+0.15: arcsecond resolution ammonia observations **213**, 148
- Heber, U., see Groot, D., et al. **223**, L1
- Heber, U., see Hunger, K., et al. **224**, 57
- Heber, U., see Husfeld, D., et al. **222**, 150
- Heck, A., see Wamsteker, W., et al. **220**, 341 (79, 1)
- Hecquet, J., Klaus, V.: Comparison of optical measurements of seeing and calculations based on radiosonde data **225**, 585
- Heemskerk, M.H.M., van Paradijs, J.: Analysis of the optical light curve of the massive X-ray binary LMC X-4 **223**, 154
- Heijblok, M., see Thé, P.S., et al. **226**, 415 (81, 115)
- Heintz, W.D.: The substellar masses of Wolf 424 **217**, 145
- Heintz, W.D.: The triple star Kpr 99 **211**, 156
- Hein, H., see Mauersberger, R., et al. **223**, 376 (79, 217)
- Heise, J., see de Jager, C., et al. **211**, 157
- Heithausen, A., Mebold, U.: The gas-to-dust ratio and the molecular hydrogen content in galactic cirrus clouds **214**, 347
- Heki, K., see Yoshino, T., et al. **224**, 316
- Helt, B.E., see Clausen, J.V., et al. **215**, 410 (77, 257)
- Henderson, J., see Amaldi, E., et al. **216**, 325
- Henkel, C., see Becker, R., et al. **211**, L19
- Henkel, C., see Mauersberger, R. **223**, 79
- Henkel, C., see Mauersberger, R., et al. **226**, L5
- Henkel, C., see Stahl, O., et al. **221**, 321
- Henkel, C., see Wiklund, T. **225**, 1
- Henkel, C., see Wilson, T.L., et al. **214**, 321
- Henkel, C., see Wouterloot, J.G.A., et al. **215**, 131

- Hensler, G., see Böhringer, H. **215**, 147
- Herbstmeier, U., see Rohlf, R., et al. **211**, 402
- Herbst, E., Millar, T.J., Wlodek, S., Bohme, D.K.: The chemistry of silicon in dense interstellar clouds **222**, 205
- Herbst, E., see Adams, N.G., et al. **220**, 269
- Herbst, E., see Galloway, E.T. **211**, 413
- Hermans, D., Goossens, M.: Dynamic stabilization of unstable gravity modes by magnetic fields in non-uniform and compressible plasmas **225**, 569
- Herold, H., see Finkbeiner, B., et al. **225**, 479
- Herold, H., see Kraus, U., et al. **223**, 246
- Herold, H., see Maile, T., et al. **223**, 251
- Herold, H., see Nollert, H.-P., et al. **208**, 153
- Herold, H., see Rebetzky, A., et al. **225**, 137
- Herpe, G., see Vanderriest, C., et al. **215**, 1
- Herrero, A., see Kudritzki, R.P., et al. **226**, 235
- Heske, A.: A multifrequency study of circumstellar envelopes of cool giants and supergiants **208**, 77
- Heske, A., see Engels, D. **226**, 421 (**81**, 323)
- Heske, A., te Lintel Hekkert, P., Maloney, P.R.: Irregular structure of the envelope around the carbon-rich star TX Piscium **218**, L5
- Hessman, F.V., Koester, D., Schoembs, R., Barwig, H.: Time-resolved spectroscopy of the eclipsing dwarf nova OY Carinae **213**, 167
- Heydari-Malayeri, M., Magain, P., Remy, M.: Two more very massive stars resolved **222**, 41
- Heydari-Malayeri, M., see Le Bertre, T., et al. **225**, 417
- Heynderickx, D., see Waelkens, C. **208**, 129
- Heyvaerts, J.F., Priest, E.R.: A model for a non-Keplerian magnetic accretion disk with a magnetically heated corona **216**, 230
- Hillebrandt, W., Meyer, F.: A common envelope model for SN 1987A **219**, L3
- Hillebrandt, W., see Janka, H.-T. **219**, 363 (**78**, 375)
- Hillebrandt, W., see Janka, H.-T. **224**, 49
- Hillebrandt, W., see Müller, E., et al. **216**, 19
- Hillebrandt, W., see Müller, E., et al. **220**, 167
- Hill, G.: Studies of late-type binaries. II. The physical parameters of VW Cephei **218**, 141
- Hill, G., Fisher, W.A., Holmgren, D.: Studies of late-type binaries. III. A spectroscopic study of V 566 Ophiuchi **218**, 152
- Hill, G., Fisher, W.A., Holmgren, D.: Studies of late-type binaries. I. The physical parameters of 44 $\tau$  Bootis ABC **211**, 81
- Hiltner, P.R., see Meisenheimer, K., et al. **219**, 63
- Hiotelis, N., see Voglis, N. **218**, 1
- Hippenlein, H.H.: Arp 118, an interacting system with extreme velocity gradients **216**, 11
- Hippenlein, H.H., Münch, G.: Highly excited molecular hydrogen in M 42 and other nebulae **213**, 323
- Hoang, S., see Lecacheux, A., et al. **217**, 237
- Hodapp, K.-W., see Eiroa, C. **210**, 345
- Hodapp, K.-W., see Eiroa, C. **223**, 271
- Höflich, P., see Müller, E., et al. **220**, 167
- Höflich, P., see Zorec, J., et al. **210**, 279
- Hoekzema, N., see Humphreys, R.M., et al. **218**, L17
- Hogeveen, S.J., see Waters, L.B.F.M., et al. **220**, L1
- Holmgren, D., see Hill, G., et al. **211**, 81
- Holmgren, D., see Hill, G., et al. **218**, 152
- Holweger, H., see Griffin, R.E.M. **214**, 249
- Hongguang Bi, Börner, G., Yaoquan Chu: Correlations in the absorption lines of the quasar Q 0420-388 **218**, 19
- Hopp, U., see Reimers, D., et al. **218**, 71
- Horedt, G.P.: Models of evolutionary tracks of planetary satellites **209**, 411
- Horville, D., see Soubeyran, A., et al. **222**, 27
- Hough, D.H., see Charlot, P., et al. **211**, 261
- Houjun Mo, see Börner, G. **223**, 25
- Houjun Mo, see Börner, G. **224**, 1
- Houjun Mo, see Börner, G., et al. **219**, 29
- Houjun Mo, see Börner, G., et al. **221**, 191
- Houtekamer, P., see van Genderen, A.M., et al. **213**, 161
- Hovenier, J.W., Hage, J.I.: Relations involving the spherical albedo and other photometric quantities of planets with thick atmospheres **214**, 391
- Hovenier, J.W., see Stammes, P., et al. **225**, 239
- Howarth, I.D., see Willis, A.J., et al. **215**, 410 (**77**, 269)
- Hoyng, P., see van Geffen, J.H.G.M. **213**, 429
- Hric, L., see Belyakina, T.S., et al. **223**, 119
- Hron, J.: OB star distances and the rotation curve of the outer Galaxy **222**, 85
- Hsu, J.C., see Huang, L., et al. **219**, 364 (**78**, 431)
- Hu, J.Y., Thè, P.S., de Winter, D.: Photometric and spectroscopic study of three candidate Herbig Ae/Be stars: HD 37411, HD 100546 and HD 104237 **208**, 213
- Hu Hui, Kan Rongju, Wang Rui, Cai Xin, Chen Cuixian: A method for predicting a strong earthquake by means of astrometric observations **224**, 321
- Huang Lin, see Breger, M., et al. **214**, 209
- Huang, L., Hsu, J.C., Guo, Z.H.: A search for time variability and its possible regularities in linear polarization of Be stars **219**, 364 (**78**, 431)
- Huang, T.-Y., see Thomasson, M., et al. **211**, 25
- Huang, T.-Y., Zhu, J., Xu, B.-X., Zhang, H.: The concepts of International Atomic Time (TAI) and Terrestrial Dynamic Time (TDT) **220**, 329
- Hubert, A.M., see Floquet, M., et al. **214**, 295
- Huchtmeier, W.K., Richter, O.-G.: H I observations of galaxies in the Virgo cluster of galaxies. II. Global parameters of the galaxies **210**, 1
- Huchtmeier, W.K., see Altenhoff, W.J., et al. **222**, 323
- Hudec, R., Peresty, R., Meinunger, L., Wenzel, W., Motch, C.: Possible optical transient in Triangulum and its relation to the  $\gamma$ -ray burst sources **225**, 411
- Hughes, D.W.: Changes in the extent of the emission region on a cometary nucleus and its effect on the activity index **220**, 301
- Hulot, E., Vilmer, N., Trotet, G.: Relative timing of solar prompt  $\gamma$ -ray line and X-ray emission expected from a trap plus precipitation model for protons and electrons **213**, 383
- Hummel, C.A., see Quirrenbach, A., et al. **226**, L1
- Hummel, E., Krause, M., Lesch, H.: Linearly polarized radioemission from the anomalous arms in NGC 4258 (M 106) **211**, 266
- Hummel, E., see Beck, R., et al. **222**, 58
- Hummel, E., see Fürst, E., et al. **209**, 361
- Hummel, E., see Krause, M., et al. **217**, 4
- Hummel, E., see Krause, M., et al. **217**, 17
- Hummel, E., see Unger, S.W., et al. **208**, 14
- Hummel, E., van der Hulst, J.M.: Radio continuum observations of four edge-on spiral galaxies **226**, 416 (**81**, 51)



- Humphreys, R.M., Lamers, H.J.G.L.M., Hoekzema, N., Cassatella, A.: The distance and evolutionary phase of the Luminous Blue Variable AG Carinae **218**, L17
- Humphreys, R.M., see Berkhuijsen, E.M. **214**, 68
- Humphreys, R.M., see Zickgraf, F.-J., et al. **220**, 206
- Hunger, K., Heber, U., Groote, D.: The distance of the helium-variable B star HD 37479 **224**, 57
- Huovelin, J., Linnaluoto, S., Tuominen, I., Virtanen, H.: Observations on the variability of linear polarization in late-type dwarf stars **218**, 340 (**78**, 129)
- Huovelin, J., see Belyakina, T.S., et al. **223**, 119
- Hurley, K., see Boer, M., et al. **214**, 148
- Husfeld, D., Butler, K., Heber, U., Drilling, J.S.: Non-LTE analysis of extremely helium-rich stars. I. The hot sdO stars LSE 153, 259 and 263 **222**, 150
- Husfeld, D., see Kudritzki, R.P., et al. **226**, 235
- Hutsemékers, D., Surdej, J.: Revisited mass-loss rates for a sample of central stars of planetary nebulae **219**, 237
- Hyland, A.R., see McGregor, P.J., et al. **223**, 237
- Icke, V.: Photon surfing near compact accreting objects **216**, 294
- Icke, V., Preston, H.L.: The dynamics of the Calabash Nebula **211**, 409
- Icke, V., see van de Weygaert, R. **213**, 1
- Ida, S., Nakazawa, K.: Collisional probability of planetesimals revolving in the solar gravitational field. III **224**, 303
- Ida, S., see Nakazawa, K., et al. **220**, 293
- Ida, S., see Nakazawa, K., et al. **221**, 342
- Iijima, T.: Recent spectral variation of the peculiar nova-like object PU Vulpeculae **215**, 57
- Iijima, T., see Barbon, R., et al. **214**, 131
- Iijima, T., see Barbon, R., et al. **220**, 83
- Illarionov, A.F., see Bisnovatyi-Kogan, G.S. **213**, 107
- Ilovaisky, S.A., see Chevalier, C., et al. **210**, 114
- Ilovaisky, S.A., see Chevalier, C., et al. **217**, 108
- Ilovaisky, S.A., see Geffert, M., et al. **209**, 423
- Ilyin, I.V., see de Jager, C., et al. **211**, 157
- Ilyin, I.V., see Vilhu, O., et al. **222**, 179
- Imbert, M., Andersen, J., Ardeberg, A., Duquennoy, A., Lindgren, H., Maurice, E., Mayor, M., Mermilliod, J.C., Nordström, B., Prévot, L.: Radial velocities of southern stars obtained with the photoelectric scanner Coravel. VIII. Radial velocity variations of eleven Cepheids in the Large and Small Magellanic Clouds **226**, 421 (**81**, 339)
- Immerschmitt, S., Schröter, E.H.: The behaviour of asymmetry and other profile parameters of the Fe I  $\lambda$  5576.1 Å line in solar regions of varying magnetic activity **208**, 307
- Insertis, F.M., see Mediavilla, E. **214**, 79
- Iovino, A., see Cristiani, S., et al. **215**, 409 (**77**, 161)
- Isaacman, R., see van Paradijs, J. **222**, 129
- Isaak, G.R., McLeod, C.P., Pallé, P.L., van der Raay, H.B., Roca Cortés, T.: Solar oscillations as seen in the Na I and K I absorption lines **208**, 297
- Isaak, G.R., see Pallé, P.L., et al. **216**, 253
- Isern, J., see Simonneau, E., et al. **208**, 166
- Islaker, H., Nussbaumer, H., Vogel, M.: Eclipse cross-sections of cool components in double star systems **219**, 271
- Israel, F.P., see Schwing, P.B.W. **220**, 343 (**79**, 79)
- Iucci, N., Parisi, M., Signorini, C., Storini, M., Villaresi, G.: Short-term cosmic-ray increases and magnetic cloud-like structures during Forbush decreases **226**, 421 (**81**, 367)
- Ivanova, V., see Geffert, M., et al. **224**, 323
- Iyengar, K.V.K., Ghosh, S.K., Rengarajan, T.N., Verma, R.P., Joshi, S.C., Srivastava, R.K.: Near-infrared observations and optical identifications of a few unassociated IRAS sources with dust shells **221**, 250
- Jackson, J.M., see Nguyen-Q-Rieu, et al. **220**, 57
- Jackson, N., see Marcaide, J.M., et al. **211**, L23
- Jackson, P.D., Kundu, M.R., White, S.M.: Quiescent and flaring radio emission from the flare stars AD Leonis, EQ Pegasi, UV Ceti, Wolf 630, YY Geminorum and YZ Canis Minoris **210**, 284
- Jackson, P.D., see White, S.M., et al. **225**, 112
- Jacobson, R.A., Synnott, S.P., Campbell, J.K.: The orbits of the satellites of Mars from spacecraft and Earthbased observations **225**, 548
- Jahn, K.: Current sheet as a diagnostic for the subphotospheric structure of a spot **222**, 264
- Jakobsen, P., see Perryman, M.A.C., et al. **215**, 195
- Janka, H.-T., Hillebrandt, W.: Monte Carlo simulations of neutrino in type II supernovae **219**, 363 (**78**, 375)
- Janka, H.-T., Hillebrandt, W.: Neutrino emission from type II supernovae: an analysis of the spectra **224**, 49
- Janka, H.-T., Mönchmeyer, R.: Anisotropic neutrino emission from rotating protoneutron stars **209**, L5
- Janka, H.-T., Mönchmeyer, R.: Hydrostatic post bounce configurations of collapsed rotating iron cores: neutrino emission **226**, 69
- Jankovics, I., see Tjin A Djie, H.R.E., et al. **218**, 338 (**78**, 1)
- Jankowski, D.G., see Chyba, C.F., et al. **219**, L23
- Jaschek, C., see Jaschek, M., et al. **218**, 180
- Jaschek, M., Andriolat, Y., Jaschek, C.: A survey of F-type stars **218**, 180
- Jasniewicz, G., see Acker, A., et al. **224**, 363 (**80**, 201)
- Jatenco-Pereira, V., Opher, R.: Effect of diverging magnetic fields on mass loss in late-type giant stars **209**, 327
- Jensen, K.S., see Clausen, J.V., et al. **215**, 410 (**77**, 257)
- Jiang Shi-yang, see Breger, M., et al. **214**, 209
- Jianlong Lu, see Yongheng Zhao, et al. **223**, 147
- Johansson, L.E.B., see Booth, R.S., et al. **216**, 315
- Johansson, L.E.B., see Sopka, R.J., et al. **210**, 78
- Johansson, L., see Bergvall, N., et al. **222**, 49
- Johnson, W., see Amaldi, E., et al. **216**, 325
- Johnston, K.J., see Wilson, T.L., et al. **214**, 321
- Joly, M.: Formation of Ca II lines in active galactic nuclei **208**, 47
- Joncas, G., Roger, R.S., Dewdney, P.E.: New radio observations of two supernova remnants in Cassiopeia: G126.2+1.6 and G127.1+0.5 **219**, 303
- Joncas, G., see Kömpe, C., et al. **221**, 295
- Jones, J., see Hammer, F., et al. **208**, L7
- Jordan, S., see Groote, D., et al. **223**, L1
- Jordana Rdz, J.J., Salvador-Solé, E., Solanes, J.M.: Intrinsic versus observed properties in near large spherical structures **209**, 15
- Jordi, C., see Trullols, E., et al. **226**, 415 (**81**, 47)
- Jorissen, A., Arnould, M.: Proton mixing in He-rich layers: the  $^{13}\text{C}(\alpha, n)^{16}\text{O}$  neutron source and associated nucleosynthesis **221**, 161
- Jorissen, A., see Boffin, H.M.J. **224**, L31
- Joshi, S.C., see Iyengar, K.V.K., et al. **221**, 250
- Joshi, U.C., see Sen, A.K., et al. **217**, 307
- Jourdain de Muizon, M., see d'Hendecourt, L.B. **223**, L5
- Journet, A., see Laclare, F. **213**, 522 (**77**, 131)

- Jüttner, A., Reitermann, A., Stahl, O., Wolf, B.: High resolution spectroscopy of near main sequence B stars of blue globular clusters in the Magellanic Clouds **226**, 415 (81, 93)
- Junor, W., see Salter, C.J., et al. **220**, 42
- Jørgensen, H.E., see Hansen, L., et al. **211**, L9
- Jørgensen, H.E., see West, R.M. **218**, 307
- Kaasra, J.S.: Deprojection of anisotropic emission in transparent systems **224**, 338
- Kaasra, J.S., Barr, P.: Soft and hard X-ray variability from the accretion disk of NGC 5548 **226**, 59
- Kabus, H., see Dachs, J. **218**, 338 (78, 25)
- Kähler, H.: The structure equations of contact binaries and the light curve paradox **209**, 67
- Käppeler, F., see Beer, H., et al. **211**, 245
- Kaiser, D.: Spectral energy distributions of Be stars. II. Determination of Be star parameters by comparison between measured and model spectra **222**, 187
- Kaiser, D., see Dachs, J., et al. **219**, 365 (78, 487)
- Kaisig, M.: Numerical simulation of acoustic instabilities in thin accretion disks **218**, 89
- Kaisig, M.: Numerical simulation of the formation of shock waves in thin accretion disks and the resulting angular momentum transport **218**, 102
- Kallrath, J., see Hagel, J. **222**, 344
- Kaluzny, J., see Richtler, T. **226**, 418 (81, 225)
- Kameswara Rao, N., see Raveendran, A.V. **215**, 63
- Kaminker, A.D., Pavlov, G.G., Shibano, Y.A., Kurt, V.G., Smirnov, A.S., Shamolin, V.M., Kopaeva, I.F., Sheffer, E.K.: Spectral evolution of a burst from MXB 1728-34 and constraints on burster parameters **220**, 117
- Kan Rongju, see Hu Hui, et al. **224**, 321
- Kanbach, G., see Mattox, J.R., et al. **226**, 145
- Kaplan, J., see Bouquet, A., et al. **222**, 103
- Karnashov, A.N., see Moskalenko, E.I., et al. **223**, 141
- Karttunen, H.: Modelling asteroid brightness variations. I. Numerical methods **208**, 314
- Karttunen, H., Bowell, E.: Modelling asteroid brightness variations. II. The uninterpretability of light curves and phase curves **208**, 320
- Kastner, J.H., Mazzali, P.A.: Infrared excess and H $\alpha$  luminosity in Be stars: a constant thickness disc model **210**, 295
- Katgert, P., see Rhee, G.F.R.N., et al. **217**, 1
- Katz, J.I.: Arcs around SN 1987 A **218**, 289
- Kaufmann, P., see de Jager, C., et al. **211**, 157
- Kawaguchi, N., see Yoshino, T., et al. **224**, 316
- Kawai, N., see Brinkmann, W., et al. **218**, L13
- Kayser, R., Weiss, A., Refsdal, S., Schneider, P.: Gravitational micro-lensing due to an ensemble of compact objects with different masses **214**, 4
- Kayser, R., Witt, H.J.: Amplification near gravitational lens caustics **221**, 1
- Kazès, I., see Akujor, C.E., et al. **224**, 363 (80, 215)
- Keenan, F.P., see Conlon, E.S., et al. **224**, 65
- Kegel, W.H.: The interpretation of correlations between observed parameters of molecular clouds **225**, 517
- Kegel, W.H., see Piehler, G. **214**, 339
- Keliang Huang, see Yongheng Zhao, et al. **223**, 147
- Keller, H.U., see Thomas, N. **213**, 487
- Keller, H.U., Thomas, N.: Evidence for near-surface breezes on comet P/Halley **226**, L9
- Kendziorra, E., see Greenhill, J.G., et al. **208**, L1
- Khalil, N.M., see Youssef, N.H. **208**, 271
- Khalil, N.M., see Youssef, N.H. **215**, 165
- Khan, J.I., see Melrose, D.B. **219**, 308
- Khokhlova, V.L., see Rice, J.B., et al. **208**, 179
- Kidger, M.R.: The optical variability of 3C 345 **226**, 9
- Kikuchi, S., Mikami, Y., Mukai, T., Mukai, S.: Polarimetry of comet Bradfield (1987s) **214**, 386
- Kilian, J., Nissen, P.E.: Chemical abundances in early B-type stars. I. Sample and metal line equivalent widths **224**, 364 (80, 255)
- Kilkenny, D., see de Jager, C., et al. **211**, 157
- Kimeswenger, S., Weinberger, R.: An optical spiral arm beyond the Perseus arm **209**, 51
- Kirk, J.G., Mastichiadis, A.: Neutrons from active galactic nuclei **213**, 75
- Kirk, J.G., Schneider, P.: Particle acceleration at modified shock fronts. II. The problem of injection **225**, 559
- Kirk, J.G., see Schneider, P. **217**, 344
- Kister, J., see Papoular, R., et al. **217**, 204
- Kjeldsen, H., see Frandsen, S., et al. **215**, 287
- Klaus, V., see Hecquet, J. **225**, 585
- Klein, M.J., see Gulkis, S., et al. **213**, 465
- Klein, U., see Harnett, J.I., et al. **216**, 39
- Klein, U., see Völk, H.J., et al. **213**, L12
- Klein, U., Wielebinski, R., Haynes, R.F., Malin, D.F.: A new radio continuum survey of the Magellanic Clouds at 1.4 GHz. II. The radio morphology, and thermal and nonthermal emission of the LMC **211**, 280
- Kley, W.: Radiation hydrodynamics of the boundary layer in accretion disks. I. Numerical methods **208**, 98
- Kley, W.: Radiation hydrodynamics of the boundary layer in accretion disks. II. Optically thick models **222**, 141
- Kneer, F., see von Uexküll, M., et al. **208**, 290
- Knežević, Z., see Farinella, P., et al. **217**, 298
- Knude, J.: [Fe/H], age and distance for the F-stars of an unbiased radial velocity sample at the north galactic pole **226**, 418 (81, 215)
- Koch-Miramond, L., see Aurière, M., et al. **214**, 113
- Kömpe, C., Joncas, G., Baudry, A., Wouterloot, J.G.A.: Multi-line observations and analysis of the Sharpless 247/252 gas complex **221**, 295
- Köppen, J., see Acker, A., et al. **224**, 363 (80, 201)
- Köppen, J., see Preite-Martinez, A., et al. **226**, 421 (81, 309)
- Koester, D., Reimers, D.: Discovery of a new extremely hot DA white dwarf close to the open cluster NGC 6405 **217**, L1
- Koester, D., Reimers, D.: Discovery of a planetary nebula in the field of the open cluster NGC 6087 **223**, 326
- Koester, D., Weidemann, V.: Detection of Lyman  $\alpha$  in the spectrum of a white dwarf with helium atmosphere **219**, 276
- Koester, D., see Hessman, F.V., et al. **213**, 167
- Koester, D., see Reimers, D. **218**, 118
- Koester, D., see Weidemann, V. **210**, 311
- Kollatschny, W., Fricke, K.J.: The group environment of Seyfert galaxies. I **219**, 34
- Kollatschny, W., see Fricke, K.J. **213**, 521 (77, 75)
- Kolosov, D.E., Lipunov, V.M., Postnov, K.A., Prokhorov, M.E.: Recycled radiopulsar reservation in the  $P$ - $\dot{P}$  diagram **215**, L21
- Kondo, Y., see Brandi, E., et al. **215**, 331
- Kondo, Y., see Chan, K.L., et al. **215**, 387
- Kontizas, E., see Chrysovergis, M., et al. **217**, 392 (77, 357)
- Kontizas, M., see Chrysovergis, M., et al. **217**, 392 (77, 357)
- Kopaeva, I.F., see Kaminker, A.D., et al. **220**, 117
- Korevaar, P.: Time-dependent corona models: coronae with accretion **226**, 209

- Korevaar, P., Hearn, A.G.: Time-dependent corona models: dynamical response to perturbations **220**, 177
- Korevaar, P., Hearn, A.G.: Time-dependent corona models: global relaxation oscillations **224**, 141
- Korevaar, P., Martens, P.C.H.: Time-dependent corona models: scaling laws **226**, 203
- Koutchmy, S., see Lamy, P.L., et al. **222**, 316
- Koutchmy, S., see Loucif, M.L. **213**, 521 (77, 45)
- Kraakman, H., see van Paradijs, J., et al. **223**, 375 (79, 205)
- Kramer, E.N., see Moskalenko, E.I., et al. **223**, 141
- Krashennikova (Baryshnikova), Ruzmaikin, A., Sokoloff, D., Shukurov, A.: Configuration of large-scale magnetic fields in spiral galaxies **213**, 19
- Krasnobabtev, V.I., see Belyakina, T.S., et al. **223**, 119
- Kraus, U., Herold, H., Maile, T., Nollert, H.-P., Rebetzky, A., Ruder, H., Wolf, K.: Towards a self-consistent description of accretion columns. III. Radiation pattern and computer-generated pictures of the emission region **223**, 246
- Kraus, U., see Nollert, H.-P., et al. **208**, 153
- Kraus, U., see Rebetzky, A., et al. **225**, 137
- Krause, F., see Brandenburg, A., et al. **213**, 411
- Krause, M., Beck, R., Hummel, E.: The magnetic field structures in two nearby spiral galaxies. II. The bisymmetric spiral magnetic field in M81 **217**, 17
- Krause, M., Hummel, E., Beck, R.: The magnetic field structures in two nearby spiral galaxies. I. The axisymmetric spiral magnetic field in IC 217, 4
- Krause, M., see Hummel, E., et al. **211**, 266
- Krautter, J., see Pasquini, L., et al. **218**, 187
- Krelowski, J., see Niedzielski, A. **214**, 304
- Krelowski, J., see Westerlund, B.E. **218**, 216
- Kreysa, E., see Altenhoff, W.J., et al. **222**, 323
- Kreysa, E., see Chini, R., et al. **216**, L5
- Kreysa, E., see Chini, R., et al. **219**, 87
- Kreysa, E., see Chini, R., et al. **221**, L3
- Kreysa, E., see Mezger, P.G., et al. **209**, 337
- Kreysa, E., see Salter, C.J., et al. **220**, 42
- Krichbaum, T., see Quirrenbach, A., et al. **226**, L1
- Krisciunas, K., see Richardson, K.J., et al. **221**, 95
- Krisciunas, K., see Richardson, K.J., et al. **224**, 199
- Kristensen, L.K., West, R.M.: On the lost minor planet (719) Albert **218**, 317
- Kroll, R., see North, P. **218**, 343 (78, 325)
- Kronberg, P.P., see Biermann, P.L., et al. **208**, 22
- Krügel, E., Densing, R., Nett, H., Röser, H.P., Schäfer, F., Schmid-Burgk, J., Schwaab, G., van der Wal, P., Wattenbach, R.: Observations of CO ( $J=7-6$ ) in star-forming regions **211**, 419
- Krügel, E., see Chini, R., et al. **216**, L5
- Krügel, E., see Schmid-Burgk, J., et al. **215**, 150
- Krüger, H., see Fritze-v-Alvensleben, U., et al. **224**, L1
- Krüß, A., see Steffen, M., et al. **213**, 371
- Kudritzki, R.P., Cabanne, M.L., Husfeld, D., Niemela, V.S., Groth, H.G., Puls, J., Herrero, A.: Quantitative spectroscopy of O-stars in the Magellanic Clouds. I. The young open cluster NGC 346 in the SMC **226**, 235
- Kudritzki, R.P., Pauldrach, A.W.A., Puls, J., Abbott, D.C.: Radiation-driven winds of hot stars. VI. Analytical solutions for wind models including the finite cone angle effect **219**, 205
- Kudritzki, R.P., see Gabler, R., et al. **226**, 162
- Kühne, C.: Wavefront correlation functions of segmented mirrors **216**, 333
- Kühr, H., see Fürst, E., et al. **223**, 66
- Kühr, H., see Stickel, M., et al. **223**, 383 (80, 103)
- Kühr, H., see Stickel, M., et al. **224**, L27
- Kuijpers, J., see van den Oord, G.H.J., et al. **209**, 296
- Kuiper, T.B.H., see Gulkis, S., et al. **213**, 465
- Kundu, M.R., see Jackson, P.D., et al. **210**, 284
- Kundu, M.R., see White, S.M., et al. **225**, 112
- Kunth, D., see Arnault, Ph., et al. **224**, 73
- Kurt, V.G., see Kaminker, A.D., et al. **220**, 117
- Kwok, S., see Aaquist, O.B. **222**, 227
- Kylafis, N., see Mastichiadis, A., et al. **208**, L11
- la Dous, C.: Synthetic optical and ultraviolet spectra of stationary accretion disks **211**, 131
- La Franca, F., see Cristiani, S., et al. **215**, 409 (77, 161)
- La Padula, C., see Greenhill, J.G., et al. **208**, L1
- Laclare, F., Journet, A.: Observations of the Sun at the CERGA Astrolabe in 1986 **213**, 522 (77, 131)
- Lacombe, F., see Monin, J.-L., et al. **215**, L1
- Lacombe, F., Tiphène, D., Rouan, D., Léna, P., Combes, M.: Imagery with infrared arrays. I. Ground-based system and astronomical performances **215**, 211
- Ladreiter, H.P., Leblanc, Y.: Jovian hectometric radiation: beaming, source extension, and solar wind control **226**, 297
- Lafon, J.-P.J., see Bel, N., et al. **208**, 331
- Lafon, J.-P.J., see Gillet, D., et al. **220**, 185
- Lafon, J.-P.J., see Millet, J., et al. **214**, 327
- Lagage, P.O., see Parvaneh, D.L., et al. **213**, 287
- Lagerkvist, C.-I., Magnusson, P., Williams, I.P., Buontempo, M.E., Gibbs, P., Morrison, L.V.: Physical studies of asteroids. XIX. Phase relations and composite lightcurves obtained with the Carlsberg Meridian Circle **219**, 366 (78, 519)
- Lagrange-Henri, A.M., Beust, H., Ferlet, R., Vidal-Madjar, A.: The circumstellar gas around  $\beta$  Pictoris. VIII. Evidence for a clumpy structure of the infalling gas **215**, L5
- Lagrange-Henri, A.M., see Beust, H., et al. **223**, 304
- Lahulla, F., see Trullols, E., et al. **226**, 415 (81, 47)
- Lam, S.K., see Chollet, F., et al. **226**, 418 (81, 285)
- Lamarre, J.M., see Gajd, M., et al. **215**, 92
- Lamarre, J.M., see Pajot, F., et al. **223**, 107
- Lamb, R.C., see Fegan, D.J., et al. **211**, L1
- Lambert, D.L., see Tomkin, J., et al. **219**, L15
- Lamers, H.J.G.L.M., see Burger, P. **218**, 161
- Lamers, H.J.G.L.M., see Groenewegen, M.A.T. **223**, 378 (79, 359)
- Lamers, H.J.G.L.M., see Groenewegen, M.A.T., et al. **221**, 78
- Lamers, H.J.G.L.M., see Humphreys, R.M., et al. **218**, L17
- Lamers, H.J.G.L.M., see Trams, N.R., et al. **218**, L1
- Lamers, H.J.G.L.M., see Waters, L.B.F.M., et al. **211**, 208
- Lamers, H.J.G.L.M., see Waters, L.B.F.M., et al. **213**, L19
- Lamy, P.L., Malburet, P., Liebaria, A., Koutchmy, S.: Comet P/Halley at a heliocentric preperihelion distance of 2.6 AU: jet activity and properties of the dust coma **222**, 316
- Lamy, P.L., see Perrin, J.-M. **226**, 288
- Landi Degl'Innocenti, E., see Bommier, V., et al. **211**, 230
- Landi Degl'Innocenti, E., see Landolfi, M., et al. **216**, 113
- Landi Degl'Innocenti, M., see Landolfi, M., et al. **216**, 113
- Landolfi, M., Landi Degl'Innocenti, M., Landi Degl'Innocenti, E.: Some comments on the methods for measuring magnetic fields in late-type stars **216**, 113
- Lane, K.R., see Amaldi, E., et al. **216**, 325
- Langer, N.: Mass-dependent mass loss rates of Wolf-Rayet stars **220**, 135
- Langer, N.: Standard models of Wolf-Rayet stars **210**, 93

- Langer, N., Arcoragi, J.-P., Arnould, M.: Neutron capture nucleosynthesis and the evolution of 15 and  $M_{\odot}$  stars. I. The core helium burning phase **210**, 187
- Langer, N., El Eid, M.F., Baraffe, I.: Blue supergiant supernova progenitors **224**, L17
- Lanz, T., see Artru, M.-C., et al. **223**, 381 (80, 17)
- Lapasset, E., see Clariá, J.J., et al. **219**, 363 (78, 363)
- Larsson, S.: Optical one second quasi-periodic oscillations in VV Puppis **217**, 146
- Lasenby, A.N., see Seiradakis, J.H., et al. **226**, 421 (81, 291)
- Lasota, J.P., see Hameury, J.M. **211**, L15
- Laspas, V., see Meaburn, J., et al. **225**, 497
- Latour, H.J., see van Genderen, A.M., et al. **223**, 376 (79, 263)
- Lauberts, A., see Peletier, R.F., et al. **217**, 391 (77, 339)
- Laureijs, R.J., Chlewicki, G., Clark, F.O., Wesselius, P.R.: Dust emission from an isolated interstellar cloud **220**, 226
- Laureijs, R.J., see Haikala, L.K. **223**, 287
- Laureijs, R.J., see Zhang, C.Y., et al. **218**, 231
- Laval, A., Rosado, M., Boulesteix, J., Georgelin, Y.P., Marcelin, M., Monnet, G., Le Coarer, E.: Scanning interferometer observations of the SNR N186D in the Large Magellanic Cloud **208**, 230
- Lawler, J.E., see Biémont, E., et al. **209**, 391
- Le Beau, J.: Measurements of visual double stars made at Nice with 50 cm refractor **213**, 522 (77, 125)
- Le Bertre, T., Epchtein, N., Gouiffes, C., Heydari-Malayeri, M., Perrier, C.: Optical and infrared observations of four suspected proto-planetary objects **225**, 417
- Le Bertre, T., see Bouchet, P., et al. **224**, 367 (80, 379)
- Le Borgne, J.F., Maun, N.: The polarized dust envelope around the red supergiant  $\mu$  Cephei **210**, 198
- Le Borgne, J.F., see Leroy, J.L. **223**, 336
- Le Borgne, J.-F., see Fraix-Burnet, D., et al. **224**, 17
- Le Borgne, J.-F., see Maun, N., et al. **218**, 213
- Le Boulbot, J., Gérin, M., Pérault, M.:  $^{12}\text{CO}$  ( $J=1-0$ ) and ( $J=2-1$ ) mapping of the  $\zeta$  Ophiuchi diffuse cloud **219**, 279
- Le Coarer, E., see Amram, P., et al. **226**, 415 (81, 59)
- Le Coarer, E., see Laval, A., et al. **208**, 230
- Le Denmat, G., see Boulanger, J.L., et al. **217**, 375
- Le Denmat, G., see Boulanger, J.L., et al. **217**, 381
- Le Dourneuf, M., see Tully, J.A., et al. **211**, 485
- Le Fèvre, O., see Hammer, F., et al. **208**, L7
- Le Roux, J.A., see Potgieter, M.S. **209**, 406
- Le Squeren, A.M., see Martin, J.M., et al. **208**, 39
- Le Squeren, A.M., see Sivagnanam, P., et al. **211**, 341
- Leahy, D.A.: Einstein IPC observations of 6 new radio supernova remnants **216**, 193
- Leblanc, Y., Gerbault, A., Lecacheux, A.: A Catalogue of Jovian decametric radio observations from January 1982 to December 1984 **217**, 392 (77, 425)
- Leblanc, Y., Gerbault, A., Lecacheux, A.: *Erratum*: A catalogue of Jovian decametric radio observations from January 1982 to December 1984 **220**, 344 (79, 154)
- Leblanc, Y., see Ladreiter, H.P. **226**, 297
- Lebreton, Y., see Cayrel de Strobel, G., et al. **225**, 369
- Lecacheux, A., see Leblanc, Y., et al. **217**, 392 (77, 425)
- Lecacheux, A., see Leblanc, Y., et al. **220**, 344 (79, 154)
- Lecacheux, A., Steinberg, J.-L., Hoang, S., Dulk, G.A.: Characteristics of type III bursts in the solar wind from simultaneous observations on board ISEE-3 and Voyager **217**, 237
- Ledezma, E., see Medina, F., et al. **220**, 313
- Leeper, M., see Belmonte, J.A., et al. **221**, 41
- Lefèvre, J.: Radiation pressure on circumstellar grains. Opacity effects **219**, 265
- Léger, A., Boissel, P., Désert, F.X., d'Hendecourt, L.: Photo-thermo-dissociation. I. A general mechanism for destroying molecules **213**, 351
- Léger, A., d'Hendecourt, L., Défourneau, D.: Physics of IR emission by interstellar PAH molecules **216**, 148
- Léger, A., see Bernard, J.P., et al. **220**, 245
- Leggett, S.K.: Infrared observations and the fundamental properties of white dwarf stars **208**, 141
- Lelouch, R., Cassé, M., Cesarsky, C.J.: The radioactivity of SN 1987 A **224**, 117
- Lei Fan, see Dean, A.J., et al. **219**, 358
- Leinert, Ch., Haas, M.: Near-infrared speckle observations of the Red Rectangle **221**, 110
- Leinert, C., Pitz, E.: Zodiacal light observed by Helios throughout solar cycle No.21: stable dust and varying plasma **210**, 399
- Leitherer, C., see Chavarria-K., C., et al. **215**, 51
- Lelièvre, G., see Perryman, M.A.C., et al. **215**, 195
- Lelièvre, G., see Soubeyran, A., et al. **222**, 27
- Lemeshchenko, V.F., see Moskalenko, E.I., et al. **223**, 141
- Lemke, M.: Abundance anomalies in main sequence A stars. I. Iron and titanium **225**, 125
- Léna, P., see Lacombe, F., et al. **215**, 211
- Lennon, D.J., Dufton, P.L.: Observations of the He I 10830 Å line in main-sequence O9-B9 stars and comparison with non-LTE predictions **225**, 439
- Lennon, D.J., see Dufton, P.L. **211**, 397
- Leone, F., see Baratta, G.A., et al. **219**, 322
- Lépine, J.R.D., see Gregorio Hetem, J.C., et al. **223**, 380 (79, 452)
- Lequeux, J., see Martin, N., et al. **215**, 219
- Leroy, B., see Bel, N. **224**, 206
- Leroy, J.L., Le Borgne, J.F.: Polarimetry of solar-type stars and magnetic field diagnostics **223**, 336
- Lesch, H., Appl, S., Camenzind, M.: Collective plasma processes in extragalactic radio sources **225**, 341
- Lesch, H., Crusius, A., Schlickeiser, R.: The stability of isotropic distribution functions of relativistic electrons. II. Oblique propagating Langmuir waves in an electron-proton plasma **209**, 427
- Lesch, H., Crusius, A., Schlickeiser, R., Wielebinski, R.: Ring currents and poloidal magnetic fields in nuclear regions of galaxies **217**, 99
- Lesch, H., see Hummel, E., et al. **211**, 266
- Lesch, H., see Schmutzler, T. **223**, 71
- Lestrade, J.-F., see Charlot, P., et al. **211**, 261
- Lewin, W.H.G., see Penninx, W., et al. **208**, 146
- Lewis, D.A.: Detection of weak signals in TeV gamma-ray astronomy: dc excess vs. periodic amplitude **219**, 352
- Lewis, D.A., see Fegan, D.J., et al. **211**, L1
- Lieu, R., Axford, W.I., Quenby, J.J.: Synchrotron radiation treated by the Weizsäcker-Williams method of virtual quanta **208**, 351
- Liljeström, T.: Rotating  $\text{H}^{13}\text{CO}^+$  disk and corotating  $\text{H}^{12}\text{CO}^+$  lobes in the L1551 outflow source **219**, L19
- Liljeström, T., Mattila, K., Friberg, P.: CO outflow and properties of the molecular gas around the far-infrared point source IRAS 04325-1419 in Lynds 1642 **210**, 337
- Liljeström, T., Mattila, K., Toriseva, M., Anttila, R.: W49N water maser: spectral atlas of time variability during 1981-85 **220**, 342 (79, 19)



- Liller, W., see Alcaïno, G., et al. **216**, 68
- Lindblad, P.O., see Sandqvist, Aa., et al. **218**, 39
- Lindgren, H., Ardeberg, A., Zuidervijk, E.: Orbital elements for double stars of Population II. The double-line high-velocity system HD 113083 **218**, 111
- Lindgren, H., see Andersen, J., et al. **219**, 142
- Lindgren, H., see Imbert, M., et al. **226**, 421 (**81**, 339)
- Lindgren, H., see Mermilliod, J.-C., et al. **220**, 341 (**79**, 11)
- Lindroos, K.P., see Gahm, G.F., et al. **211**, 115
- Lindström, C.O., see Booth, R.S., et al. **216**, 315
- Ling, J.F., see Couteau, P., et al. **219**, 365 (**78**, 483)
- Linnaluoto, S., see Huovelin, J., et al. **218**, 340 (**78**, 129)
- Linsky, J.L., Neff, J.E., Brown, A., Gross, B.D., Simon, T., Andrews, A.D., Rodonó, M., Feldman, P.A.: Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. X. The 1981 October 3 flare on V711 Tauri (=HR 1099) **211**, 173
- Linsky, J.L., see Neff, J.E., et al. **215**, 79
- Linsky, J.L., see Vilhu, O., et al. **222**, 179
- Lipunov, V.M., see Kolosov, D.E., et al. **215**, L21
- Liseau, R., see Gahm, G.F., et al. **211**, 115
- Little, L.T., see Heaton, B.D., et al. **213**, 148
- Liu, Y.-Z., see Wen, Z., et al. **219**, 1
- Livio, M., see Duschl, W.J. **209**, 183
- Livio, M., see Mochkovitch, R. **209**, 111
- Livio, M., see Sawada, K., et al. **221**, 263
- Liebaria, A., see Lamy, P.L., et al. **222**, 316
- Loireleux, E., see Bel, N., et al. **208**, 331
- Loiseau, N., see Beck, R., et al. **222**, 58
- Longair, M.S., see Meisenheimer, K., et al. **219**, 63
- Longo, G., Capaccioli, M., Bender, R., Busarello, G.: A correlation between shape and (UV-V) color for early-type galaxies **225**, L17
- Loose, H.-H., see Fritze-v.-Alvensleben, U., et al. **224**, L1
- López, R., see Simonneau, E., et al. **208**, 166
- López-Moreno, J.J., see Molina, A., et al. **226**, 311
- Lorenz, R., see Drechsel, H., et al. **221**, 49
- Loucif, M.L., Koutchmy, S.: Solar cycle variations of coronal structures **213**, 521 (**77**, 45)
- Lowe, R.M., see Biémont, E., et al. **222**, 307
- Loyola, P., see Costa, E. **218**, 340 (**78**, 141)
- Lu Ruwei, see Mao Wei, et al. **215**, 190
- Lub, J., see de Geus, E.J., et al. **216**, 44
- Lucas, R., Cernicharo, J.: Discovery of strong maser emission from HCN in IRC+10216 **218**, L20
- Lucchin, F., see Fabbri, R., et al. **219**, 7
- Luciani, J.F., see Ballet, J., et al. **218**, 292
- Ludwig, H.-G., see Steffen, M., et al. **213**, 371
- Luminet, J.-P., Pichon, B.: Tidal pinching of white dwarfs **209**, 103
- Luminet, J.-P., Pichon, B.: Tidally-detonated nuclear reactions in main sequence stars passing near a large black hole **209**, 85
- Lundström, I., Stenholm, B.: Spectrophotometry of faint Wolf-Rayet stars **218**, 199
- Lustig, G., Wöhl, H.: Solar equatorial plasma rotation from 1983 until 1986 **218**, 299
- Lu, J.F., see Xie, G.Z., et al. **220**, 89
- Lu, R.W., see Xie, G.Z., et al. **220**, 89
- Maccagni, D., see Vettolani, G., et al. **220**, 344 (**79**, 147)
- Macchetto, F., see Perryman, M.A.C., et al. **215**, 195
- Maceroni, C., see van 't Veer, F. **220**, 128
- MacGillivray, H.T., see Bhatia, R.K. **211**, 9
- MacKinnon, A.L.: A potential diagnostic for low energy, non-thermal protons in solar flares **226**, 284
- MacKinnon, A.L., Brown, J.C.: Implications of the solar flare  $\gamma$ -ray limb-brightening observations for particle acceleration and the flare magnetic environment. I. Approximate, analytical treatment **215**, 371
- Macklin, R.L., Winters, R.R., Schmidt, D.M.: Resonance neutron capture by argon-40 **216**, 109
- Maddalena, R.J., see Zuckerman, B. **223**, L20
- Madej, J.: Broadening of iron resonance lines in X-ray burst spectra **209**, 226
- Madejsky, R., see Bender, R., et al. **217**, 35
- Maeder, A., Meynet, G.: Grids of evolutionary models from 0.85 to 120  $M_{\odot}$ : observational tests and the mass limits **210**, 155
- Maeder, A., see Smith, L.F. **211**, 71
- Maeder, A., see Walter, R. **218**, 123
- Magain, P.: The chemical composition of the extreme halo stars. I. Blue spectra of 20 dwarfs **209**, 211
- Magain, P., see Andersen, J., et al. **211**, 346
- Magain, P., see D'Odorico, S., et al. **215**, 21
- Magain, P., see Heydari-Malayeri, M., et al. **222**, 41
- Magazzù, A., see Bernabeu, G., et al. **226**, 215
- Magnusson, P., see Lagerkvist, C.-I., et al. **219**, 366 (**78**, 519)
- Maile, T., Bock, U., Herold, H., Rebetzky, A., Ruder, H., Ventura, J., Wolf, K.: Towards a self-consistent description of accretion columns. IV. Iterative scattering solution of radiative transfer and effects of bulk motion **223**, 251
- Maile, T., see Kraus, U., et al. **223**, 246
- Maile, T., see Rebetzky, A., et al. **225**, 137
- Maillard, J.P., see Floquet, M., et al. **214**, 295
- Mair, G., see Müller, E., et al. **216**, 19
- Maitzen, H.M., Pavlovski, K.:  $\Delta\alpha$ -photometry of  $\lambda$  Bootis stars **219**, 253
- Maitzen, H.M., Pavlovski, K.: Further  $\Delta\alpha$ -photometry of  $\lambda$  Bootis stars **226**, 421 (**81**, 335)
- Maitzen, H.M., see Pavlovski, K. **217**, 391 (**77**, 351)
- Malagnini, M.L., see Gulati, R.K., et al. **223**, 382 (**80**, 73)
- Malburet, P., see Lamy, P.L., et al. **222**, 316
- Malherbe, J.M., see Démoulin, P., et al. **211**, 428
- Malherbe, J.M., see von Uexküll, M., et al. **208**, 290
- Malhotra, R., Fox, K., Murray, C.D., Nicholson, P.D.: Secular perturbations of the Uranian satellites: theory and practice **221**, 348
- Malin, D.F., see Klein, U., et al. **211**, 280
- Maloney, P.R., see Heske, A., et al. **218**, L5
- Maloney, P., see Thronson, H.A., Jr., et al. **214**, 29
- Mamon, G.A.: A compact group in Virgo **219**, 98
- Mamon, G.A., see Walke, D.G. **225**, 291
- Mampaso, A., Phillips, J.P., Vilchez, J.M., Pişmiş, P., Riera, A.: Optical and infrared observations of the HII region S201 **220**, 235
- Mampaso, A., see Manchado, A., et al. **214**, 139
- Mampaso, A., see Phillips, J.P. **218**, 24
- Mampaso, A., see Phillips, J.P. **218**, 257
- Mampaso, A., see Riera, A., et al. **210**, 351
- Mampaso, A., see Vilchez, J.M., et al. **213**, 303
- Manabe, S., see Yoshino, T., et al. **224**, 316
- Manara, A., see Broglia, P. **214**, 389
- Manchado, A., García-Lario, P., Pottasch, S.R.: IRAS 16455-3455 and IRAS 15154-5258: two new southern planetary nebulae **218**, 267

- Manchado, A., Pottasch, S.R.: Chemical abundances and masses of the haloes around the planetary nebulae NGC 6543 and NGC 6826 **222**, 219
- Manchado, A., Pottasch, S.R., García-Lario, P., Esteban, C., Mampaso, A.: Near-infrared survey of IRAS sources with colours like planetary nebulae **214**, 139
- Manchado, A., see Pérez, E., et al. **215**, 262
- Manchanda, R.K., see Greenhill, J.G., et al. **208**, L1
- Manchanda, R.K., Sood, R.K., Waldron, L.: A model for radio emission from SN 1987 A **211**, 353
- Mancuso, S., see Milano, L., et al. **210**, 181
- Manfroid, J., Renson, P.: Photometric variations of 46 Eridani and 210 G Eridani **223**, 187
- Manfroid, J., see Bouchet, P., et al. **224**, 367 (**80**, 379)
- Mangeney, A., Pick, M.: Quasi-periodicities in solar type II burst groups **224**, 242
- Mann, A.G., see Amaldi, E., et al. **216**, 325
- Mannheim, K., Biermann, P.L.: Photomeson production in active galactic nuclei **221**, 211
- Mannone, C., see Fehrenbach, Ch., et al. **224**, 367 (**80**, 433)
- Mantegazza, L., Antonello, E., Poretti, E.: The UU Herculis star HD 161796 **208**, 91
- Manteiga, M., Pickles, A.J., Martinez Roger, C.: Blue stragglers and the binary hypothesis **210**, 66
- Mao Wei, Wu Guangjie, Guo Xinjian, Xu Shui, Lu Ruwei: Construction of an inertial coordinate system using a CCD **215**, 190
- Marang, F., see Byrne, P.B., et al. **214**, 227
- Marang, F., see Cuypers, J., et al. **226**, 418 (**81**, 151)
- Marcaide, J.M., Alberdi, A., Elósegui, P., Schalinski, C.J., Jackson, N., Witzel, A.: The peculiar superluminal radio source 4C 39.25: observations and model **211**, L23
- Marcelin, M., see Amram, P., et al. **226**, 415 (**81**, 59)
- Marcelin, M., see Laval, A., et al. **208**, 230
- Mardirossian, F., see Giuricin, G., et al. **208**, 27
- Margoni, R., Stagni, R., Munari, U., Marton, S.: 36 revisited variable stars around Nova Cygni 1970 **226**, 421 (**81**, 393)
- Mariotti, J.-M., see Chalabae, A.A., et al. **210**, L1
- Markiewicz, W.J., see Drury, L.O'C., et al. **225**, 179
- Marquette, J.B., Rebrion, C., Rowe, B.R.: Proton transfer reactions of  $H_2^+$  with molecular neutrals at 30 K **213**, L29
- Marsden, G., see Biémont, E., et al. **209**, 391
- Marston, A.P., see Meaburn, J., et al. **208**, 17
- Marşoğlu, A., see Aslan, Z., et al. **208**, 385
- Martens, P.C.H., see Korevaar, P. **226**, 203
- Martinez Roger, C., see Arribas, S. **215**, 305
- Martinez Roger, C., see Manteiga, M., et al. **210**, 66
- Martinez, F., see Medina, F., et al. **220**, 313
- Martin-Mirones, J.M., see Goicoechea, L.J. **221**, 197
- Martin, F., see Bouquet, A., et al. **222**, 103
- Martin, F., see Druesne, P., et al. **217**, 229
- Martin, J.M., Bottinelli, L., Dennefeld, M., Gouguenheim, L., Le Squeren, A.M.: A detailed study of the OH megamaser galaxy IRAS 17208-0014 **208**, 39
- Martin, J.M., see Casoli, F., et al. **224**, 31
- Martin, M., see Goldbach, C., et al. **221**, 155
- Martin, M.C., see Bajaja, E., et al. **219**, 363 (**78**, 345)
- Martin, N., Maurice, E., Lequeux, J.: The structure of the Small Magellanic Cloud **215**, 219
- Martin, N., see Maurice, E., et al. **219**, 365 (**78**, 445)
- Martin, N., see Prévot, L., et al. **225**, 303
- Martín-Pintado, J., Bachiller, R., Thum, C., Walmsley, C.M.: A radio recombination line maser in MWC 349 **215**, L13
- Martín-Pintado, J., see Bachiller, R., et al. **210**, 366
- Martín-Pintado, J., see Bachiller, R., et al. **218**, 252
- Martín-Pintado, J., see Cernicharo, J., et al. **222**, L1
- Martín-Pintado, J., see Fuente, A., et al. **223**, 321
- Martín-Pintado, J., see Mauersberger, R., et al. **223**, 376 (**79**, 217)
- Martín-Pintado, J., see Planesas, P., et al. **216**, 1
- Martín-Pintado, J., Thum, C., Bachiller, R.: Time-variable recombination line emission in MWC 349 **222**, L9
- Marton, S., see Margoni, R., et al. **226**, 421 (**81**, 393)
- Martres, M.-J., see Mouradian, Z., et al. **224**, 267
- Martres, M.-J., see Simnett, G.M., et al. **224**, 284
- Marvridis, L., see de Jager, C., et al. **211**, 157
- Masi, S., Dall'Oglio, G., de Bernardis, P., de Santis, E., Epifani, M., Giovannozzi, E., Guarini, G., Melchiorri, F., Boscaleri, A., Natale, V., Guidi, I.: Search for extragalactic backgrounds: a balloon-borne 4-band FIR differential photometer with large throughput **226**, 357
- Mason, H.E., see Burgess, A., et al. **217**, 319
- Massaglia, S., Bodo, G., Rossi, P.: Overstability of magnetic flux tubes in the Eddington approximation **209**, 399
- Massaro, E., see Barone, P., et al. **209**, 435
- Massa, D.: The UV silicon spectra of early B stars **224**, 131
- Massi, M.: Application of Lagrangian multipliers in hybrid mapping **208**, 392
- Massi, M., see Felli, M., et al. **217**, 179
- Masson, C.R., see Sahai, R., et al. **220**, 92
- Massone, G., see Munari, U., et al. **214**, L5
- Mastichiadis, A., Kylafis, N., Ventura, J.: Supernova 1987 A: envelope metallicity and the nature of the soft X-ray component **208**, L11
- Mastichiadis, A., see Kirk, J.G. **213**, 75
- Matarrese, S., see Fabbri, R., et al. **219**, 7
- Mathioudakis, M., Doyle, J.G.: Flux-flux relation: Mg II h and k versus X-rays in dwarf M and K stars **224**, 179
- Mathlener, E., see Waters, L.B.F.M., et al. **211**, 208
- Mathys, G.: The upper main sequence of OB associations. II. The single-lined O stars: spectral classification of northern stars and lines of C and N **226**, 418 (**81**, 237)
- Mathys, G., Solanki, S.K.: Magnetic fields in late-type dwarfs: Preliminary results from a multiline approach **208**, 189
- Matsuda, T., see Sawada, K., et al. **221**, 263
- Matsumura, M., Seki, M.: Dust grains in M 104: an interpretation of the optical polarization in an external galaxy **209**, 8
- Matsuoka, M., see Brinkmann, W., et al. **218**, L13
- Mattig, W., see Nesis, A. **221**, 130
- Mattila, K.: Radio observations of CH in front of globular clusters and the galactic gas-to-dust ratio **210**, 389
- Mattila, K., see Liljeström, T., et al. **210**, 337
- Mattila, K., see Liljeström, T., et al. **220**, 342 (**79**, 19)
- Mattox, J.R., Ögelman, H., Kanbach, G.: An upper limit on the high-energy gamma-ray emission of Vela X-1 **226**, 145
- Mauersberger, R., Guélin, M., Martín-Pintado, J., Thum, C., Cernicharo, J., Hein, H., Navarro, S.: Line calibrators at  $\lambda = 1.3$ , 2 and 3 mm **223**, 376 (**79**, 217)
- Mauersberger, R., Henkel, C.: Dense gas in nearby galaxies. I. Distribution, kinematics and multilevel studies of CS **223**, 79

- Mauersberger, R., Henkel, C., Wilson, T.L., Harju, J.: Dense gas in nearby galaxies. II. CS emission from spiral galaxies **226, L5**
- Mauersberger, R., see Cernicharo, J., et al. **222, L1**
- Maurel, C., see Pajot, F., et al. **223, 107**
- Maurice, E., Bouchet, P., Martin, N.: *BVR* photoelectric photometry of late-type stars and a compilation of other data in the Small Magellanic Cloud **219, 365 (78, 445)**
- Maurice, E., see Imbert, M., et al. **226, 421 (81, 339)**
- Maurice, E., see Martin, N., et al. **215, 219**
- Mauron, N., Le Borgne, J.-F., Picquette, M.: Optical observations of the "frosty" Leo nebula (IRAS 09371 + 1212) **218, 213**
- Mauron, N., see Le Borgne, J.F. **210, 198**
- Mavridis, L.N., Nikolov, N.S., Avgoloupis, S.I., Varvoglis, P.P.: The Cepheid 1162 Aquilae **224, 365 (80, 279)**
- Mayer, P., see Drechsel, H., et al. **221, 49**
- Mayor, M., see Andersen, J., et al. **219, 142**
- Mayor, M., see Babel, J., et al. **216, 125**
- Mayor, M., see Imbert, M., et al. **226, 421 (81, 339)**
- Mayor, M., see Mermilliod, J.-C. **219, 125**
- Mayor, M., see Mermilliod, J.-C., et al. **220, 341 (79, 11)**
- May, J., see Alvarez, H., et al. **213, 13**
- Mazzali, P.A., see Kastner, J.H. **210, 295**
- Mazzei, P., Pigatto, L.: The Pleiades age and the sequential star formation **213, L1**
- Mazzitelli, I., see D'Antona, F., et al. **225, 391**
- McAshan, M.S., see Amaldi, E., et al. **216, 325**
- McCarroll, R., see Gargaud, M., et al. **208, 251**
- McCaughrean, M.J., see Aspin, C., et al. **221, 100**
- McClements, K.G.: Langmuir wave generation by thick target electron beams in solar flares: the effects of density variations and reverse currents **208, 279**
- McConnell, J.C., Parkinson, C.D., Ben-Jaffel, L., Emerich, C., Prangée, R., Vidal-Madjar, A.: H Lyman- $\alpha$  emission at Neptune: Voyager prediction **225, L9**
- McGinn, M.T., see McGregor, P.J., et al. **223, 237**
- McGregor, P.J., Hyland, A.R., McGinn, M.T.: Emission-line stars in the Magellanic Clouds: infrared spectroscopy of B[e] and Ofpe/WN9 stars **223, 237**
- McKay, D., see Byrne, P.B. **223, 241**
- McKeith, C.D., see Greve, A., et al. **215, 113**
- McLean, I.S., see Aspin, C., et al. **221, 100**
- McLeod, C.P., see Isaak, G.R., et al. **208, 297**
- McMahan, R., see Byrne, P.B., et al. **214, 227**
- Meaburn, J., Allan, P.M., Clayton, C.A., Marston, A.P., Whitehead, M.J., Pedlar, A.: A jet-like optical continuum filament in the active galaxy NGC 1275 (Perseus A) **208, 17**
- Meaburn, J., Solomos, N., Laspas, V., Goudis, C.: The expansive motions around the central hole of the complex giant filamentary shell DEM 34 (N 11) in the Large Magellanic Cloud **225, 497**
- Meaburn, J., Walsh, J.R.: Echelle observations of the high speed motions in the extreme bi-polar nebula He2-111 (PK 315 - 0°1) **223, 277**
- Mebold, U., see Becker, R., et al. **214, 402**
- Mebold, U., see Heithausen, A. **214, 347**
- Mebold, U., see Rohlfs, R., et al. **211, 402**
- Mediavilla, E., Insertis, F.M.: The influence of relativistic kinematics on the asymmetry of spectral line profiles and the observed asymmetries in AGN's **214, 79**
- Mediavilla, E., see Buitrago, J., et al. **221, 258**
- Medina, F., Echevarria, J., Ledezma, E., Martinez, F.: Infrared observations of Io during the mutual events of 1985: evidence of volcanic activity? **220, 313**
- Meinel, R., see Brandenburg, A., et al. **213, 411**
- Meinunger, L., see Hudec, R., et al. **225, 411**
- Mein, P., see von Uexküll, M., et al. **208, 290**
- Meisenheimer, K., Röser, H.-J., Hiltner, P.R., Yates, M.G., Longair, M.S., Chini, R., Perley, R.A.: The synchrotron spectra of radio hot spots **219, 63**
- Meisenheimer, K., see Neckel, T., et al. **210, 378**
- Meištas, E., see Straizys, V., et al. **222, 82**
- Melchiorri, F., see Masi, S., et al. **226, 357**
- Melia, F.: The probability of detecting absorption features in gamma-ray burst spectra **223, L9**
- Melnick, J., Tapia, M., Terlevich, R.: The galactic giant H II region NGC 3603 **213, 89**
- Melrose, D.B., Khan, J.I.: Comments on the photospheric dynamo model of Hénoux and Somov **219, 308**
- Membrado, M., Pacheco, A.F., Sañudo, J.: Statistical distributions and gravitational halos **217, 92**
- Mendoza-Torres, E., see Scalise, E., Jr., et al. **221, 105**
- Menten, K.M., Harju, J., Olano, C.A., Walmsley, C.M.: The high density molecular cores near L1551-IRS5 and B335-FIR **223, 258**
- Menten, K.M., see Wilson, T.L., et al. **214, 321**
- Merafina, M., Ruffini, R.: Systems of selfgravitating classical particles with a cutoff in their distribution function **221, 4**
- Mermilliod, J.C., Nitschelm, C.: Up-to-date DDO photoelectric photometric catalogue **226, 421 (81, 401)**
- Mermilliod, J.C., see Imbert, M., et al. **226, 421 (81, 339)**
- Mermilliod, J.-C., Mayor, M.: Red giants in open clusters. I. Binarity and stellar evolution in five Hyades-generation clusters: NGC 2447, 2539, 2632, 6633 and 6940 **219, 125**
- Mermilliod, J.-C., Mayor, M., Andersen, J., Nordström, B., Lindgren, H., Duquenois, A.: Red giants in open clusters. II. Orbits of ten spectroscopic binaries in NGC 2360, 2437, 2447, 5822, 5823, and 6475 **220, 341 (79, 11)**
- Mersov, G.A., see Bisnovatyi-Kogan, G.S., et al. **221, L7**
- Messina, A., see Gregorini, L., et al. **224, 363 (80, 239)**
- Meurs, E.J.A., van den Heuvel, E.P.J.: The number of evolved early-type close binaries in the Galaxy **226, 88**
- Mewe, R., see Rutten, R.G.M., et al. **219, 239**
- Mewe, R., see van den Oord, G.H.J. **213, 245**
- Meyer, F., Meyer-Hofmeister, E.: Constraints from the UV delay in dwarf nova outbursts **221, 36**
- Meyer, F., see Hillebrandt, W. **219, L3**
- Meyer-Hofmeister, E., see Meyer, F. **221, 36**
- Meyer-Vernet, N.: Electric antennae in the outer heliosphere: the importance of being stable **224, L5**
- Meylan, G.: Studies of dynamical properties of globular clusters. V. Implications of the observed flat MS mass function in 47 Tucanae **214, 106**
- Meylan, G., see Chiosi, C., et al. **218, 339 (78, 89)**
- Meylan, G., see Chiosi, C., et al. **219, 167**
- Meynet, G., see Maeder, A. **210, 155**
- Mezger, P.G., see Salter, C.J., et al. **220, 42**
- Mezger, P.G., Zylka, R., Salter, C.J., Wink, J.E., Chini, R., Kreysa, E., Tuffs, R.: Continuum observations of Sgr A at mm/submm wavelengths **209, 337**
- Mezzetti, M., see Giuricin, G., et al. **208, 27**
- Michelson, P.F., see Amaldi, E., et al. **216, 325**

- Mikami, H., Yamamoto, S., Saito, S., Guélin, M.: Laboratory microwave spectroscopy of the  $C_3N$  radical in the vibrationally excited state  $v_3$  217, L5
- Mikami, Y., see Kikuchi, S., et al. 214, 386
- Milani, A., see Nobili, A.M., et al. 210, 313
- Milano, L., Barone, F., Mancuso, S., Russo, G., Vittone, A.A.: Search for contact systems among EB-type binaries. I. TT Herculis 210, 181
- Milgrom, M.: Concerning the preferred surface density of giant molecular clouds in the Galaxy 211, 37
- Millar, T.J., see Herbst, E., et al. 222, 205
- Millar, T.J., see Nyman, L.-A. 222, 231
- Mille, G., see Papoular, R., et al. 217, 204
- Millet, J., Lafon, J.-P.J., Gonin, J.C.: Potential of grains in astrophysical media: influence of the surface state (porosity) 214, 327
- Minniti, D., see Clariá, J.J., et al. 219, 363 (78, 363)
- Miranda, L.F., Solf, J.: High resolution spectroscopy of the planetary nebula Hubble 12 214, 353
- Mitalas, R., see Beech, M. 213, 127
- Mitra, A.K.: Implications for the detection of ultra-high-energy gamma rays from Sco X-1 219, L1
- Mochkovitch, R., Livio, M.: The coalescence of white dwarfs and type I supernovae 209, 111
- Modena, I., see Amaldi, E., et al. 216, 325
- Moffat, A., see Carpay, J., et al. 216, 143
- Moles, M., see Vanderriest, C., et al. 215, 1
- Molina, A., Moreno, F., López-Moreno, J.J.: Equatorial cloud structure of Jupiter derived from high resolution spectroscopy in the  $\lambda\lambda$  6300–6825 Å region 226, 311
- Möllenhoff, C., Bender, R.: The peculiar kinematics of the elliptical dust-lane galaxy NGC 4589 214, 61
- Möllenhoff, C., see Bender, R., et al. 217, 35
- Mönchmeyer, R., Müller, E.: A conservative second-order difference scheme for curvilinear coordinates. I. Assignment of variables on a staggered grid 217, 351
- Mönchmeyer, R., see Janka, H.-T. 209, L5
- Mönchmeyer, R., see Janka, H.-T. 226, 69
- Mönchmeyer, R., see Müller, E., et al. 220, 167
- Moneti, A., see Bouchet, P., et al. 224, 367 (80, 379)
- Monin, J.-L., Pudritz, R.E., Rouan, D., Lacombe, F.: Infrared images of HL Tauri: scattering from an inclined, flaring disk 215, L1
- Monnet, G., see Adam, G., et al. 208, L15
- Monnet, G., see Laval, A., et al. 208, 230
- Monteiro do Vale, J.L., see Braz, M.A., et al. 217, 393 (77, 465)
- Moorwood, A.F.M., see Oliva, E., et al. 214, 307
- Mora, P., see Ballet, J., et al. 218, 292
- Moreno, F., see Molina, A., et al. 226, 311
- Moreno, M.A., see Geffert, M., et al. 224, 323
- Morley, T.A.: A catalogue of ground-based astrometric observations of the Martian satellites, 1877–1982 215, 409 (77, 209)
- Morossi, C., see Gulati, R.K., et al. 223, 382 (80, 73)
- Morras, R., see Bajaja, E., et al. 219, 363 (78, 345)
- Morras, R., see Cavarischia, G.A. 219, 364 (78, 437)
- Morris, D., see Vivekanand, M., et al. 213, 516
- Morrison, L.V., see Lagerkvist, C.-I., et al. 219, 366 (78, 519)
- Moskalenko, E.I., Popravko, G.V., Kramer, E.N., Shestaka, I.S., Karnashov, A.N., Nazarenko, V.V., Skoblikova, L.Ja., Lemeshchenko, V.F., Nazarenko, S.V., Gorbanev, Ju.M.: Possible optical identification of GB 791101 223, 141
- Moss, D., see Brandenburg, A., et al. 213, 411
- Motch, C., see Boer, M., et al. 214, 148
- Motch, C., see Bonnet-Bidaud, J.M., et al. 213, 97
- Motch, C., see Chevalier, C., et al. 217, 108
- Motch, C., see Hudec, R., et al. 225, 411
- Motch, C., Pakull, M.W.: The strength of NiII-CIII complex emission in low-mass X-ray binaries as a possible indicator of metallicity 214, L1
- Motch, C., Pakull, M.W., Mouchet, M., Beuermann, K.: An X-ray and optical study of the low-mass X-ray source 4U 1556-605 219, 158
- Mouchet, M., see Chevalier, C., et al. 217, 108
- Mouchet, M., see Gillet, D., et al. 219, 219
- Mouchet, M., see Motch, C., et al. 219, 158
- Mouradian, Z., Martres, M.-J., Soru-Escut, I., Simnett, G.M.: Comparison of H $\alpha$  absorbing features with soft X-ray images at the onset of solar flares 224, 267
- Mouradian, Z., see Simnett, G.M., et al. 224, 284
- Mouradian, Z., Soru-Escut, I.: Role of rigid rotation in the sudden disappearance of solar filaments 210, 410
- Muchmore, D., see Cuntz, M. 209, 305
- Müller, E., Mair, G., Hillebrandt, W.: Hydrodynamics of the interstellar gas in colliding galaxies. II. Non-central collisions 216, 19
- Müller, E., Hillebrandt, W., Orlo, M., Höflich, P., Mönchmeyer, R., Fryxell, B.A.: Mixing and fragmentation in supernova envelopes 220, 167
- Müller, E., see Mönchmeyer, R. 217, 351
- Müller, E., see Różycka, M., et al. 208, 69
- Münch, G., see Hippelein, H.H. 213, 323
- Münzer, H., Hanslmeier, A., Schröter, E.H., Wöhl, H.: Pole-equator-difference of the size of the chromospheric Ca II-K-network in quiet and active solar regions 213, 431
- Mukai, S., see Kikuchi, S., et al. 214, 386
- Mukai, T., see Kikuchi, S., et al. 214, 386
- Munari, U.: Studies of symbiotic stars. I. Location of the UV emitting regions in 6 S-type systems monitored by the IUE satellite 208, 63
- Munari, U., Buson, L.M., Massone, G.: Photometry of AS 296 in outbursts: a puzzling color evolution 214, L5
- Munari, U., see Margoni, R., et al. 226, 421 (81, 393)
- Mundt, R., see Poetzel, R., et al. 224, L13
- Munoz, J.R., see Wamsteker, W., et al. 220, 341 (79, 1)
- Murphy, D.C., see Booth, R.S., et al. 216, 315
- Murray, C.A.: The transformation of coordinates between the systems of B1950.0 and J2000.0, and the principal galactic axes referred to J2000.0 218, 325
- Murray, C.D., see Malhotra, R., et al. 221, 348
- Murray, J., see Wamsteker, W., et al. 220, 341 (79, 1)
- Musielak, Z.E., see Rosner, R. 219, L27
- Muxlow, T.W.B., see Fanti, C., et al. 217, 44
- Nahapetian, A., see Atoyan, A.M. 219, 53
- Nakagawa, Y., see Nakazawa, K., et al. 220, 293
- Nakagawa, Y., see Nakazawa, K., et al. 221, 342
- Nakai, N., see Nguyen-Q-Rieu, et al. 220, 57
- Nakazawa, K., Ida, S., Nakagawa, Y.: Collisional probability of planetesimals revolving in the solar gravitational field. I. Basic formulation 220, 293
- Nakazawa, K., Ida, S., Nakagawa, Y.: Collisional probability of planetesimals revolving in the solar gravitational field. II. The validity of the two-body approximation 221, 342



- Nakazawa, K., see Ida, S. 224, 303
- Nan Rendong, see Fanti, C., et al. 217, 44
- Nannurelli, M., Stella, L.: The X-ray spectrum of modified  $\alpha$ -viscosity accretion disks 226, 343
- Nasiri, S., Sobouti, Y.: Global modes of oscillation of magnetized stars 217, 127
- Natale, V., see Masi, S., et al. 226, 357
- Navarro, R., Fuentes, F.J., Nieto-Vesperinas, M.: Simulated annealing image reconstruction in photon-limited stellar speckle interferometry 208, 374
- Navarro, R., Fuentes, F.J., Nieto-Vesperinas, M.: *Erratum: Simulated annealing image reconstruction in photon-limited stellar speckle interferometry* 219, 362
- Navarro, S., see Mauersberger, R., et al. 223, 376 (79, 217)
- Naylor, T., see Reimers, D., et al. 218, 71
- Nazarenko, S.V., see Moskalenko, E.I., et al. 223, 141
- Nazarenko, V.V., see Moskalenko, E.I., et al. 223, 141
- Neckel, T., Staude, H.J., Meisenheimer, K., Chini, R., Güsten, R.: A newborn Trapezium within a bipolar nebula 210, 378
- Neff, J.E., see Linsky, J.L., et al. 211, 173
- Neff, J.E., see Vilhu, O., et al. 208, 201
- Neff, J.E., see Vilhu, O., et al. 222, 179
- Neff, J.E., Walter, F.M., Rodonò, M., Linsky, J.L.: Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XI. Ultraviolet spectral images of AR Lacertae in September 1985 215, 79
- Nepveu, M.: The influence of periodic external conditions on birth rates of O/B stars 224, 86
- Nercessian, E., Guilleoteau, S., Omont, A., Benayoun, J.J.: HCN emission and nitrogen-bearing molecules in oxygen-rich circumstellar envelopes 210, 225
- Nesis, A., Mattig, W.: The height dependence of vertical and horizontal velocities attributed to the convective overshoot in the solar atmosphere 221, 130
- Nett, H., see Krügel, E., et al. 211, 419
- Nett, H., see Schmid-Burgk, J., et al. 215, 150
- Ng, Y.K., see van Genderen, A.M., et al. 223, 376 (79, 263)
- Nguyen-Q-Rieu, Nakai, N., Jackson, J.M.: Dense molecular gas in galaxies: HCN, HCO<sup>+</sup>, and CS in M82 and NGC 253 220, 57
- Nguyen-Q-Rieu, see Sopka, R.J., et al. 210, 78
- Nguyen-Q-Rieu, see Truong-Bach 214, 267
- Nicholson, P.D., see Chyba, C.F., et al. 219, L23
- Nicholson, P.D., see Malhotra, R., et al. 221, 348
- Niedzielski, A., Krelowski, J.: Elemental depletions in single interstellar clouds 214, 304
- Niemela, V.S., see Kudritzki, R.P., et al. 226, 235
- Nieto, J.L., see Perryman, M.A.C., et al. 215, 195
- Nieto, J.-L., Bender, R.: Boxiness in elliptical galaxies 215, 266
- Nieto, J.-L., see Fraix-Burnet, D., et al. 224, 17
- Nieto, J.-L., see Fraix-Burnet, D., et al. 217, 387
- Nieto, J.-L., see Fraix-Burnet, D., et al. 221, L1
- Nieto, J.-L., see Prugniel, P., et al. 222, 5
- Nieto-Vesperinas, M., see Navarro, R., et al. 208, 374
- Nieto-Vesperinas, M., see Navarro, R., et al. 219, 362
- Nieuwenhuijzen, H., see Carpay, J., et al. 216, 143
- Nieuwland, E.R., see Thé, P.S., et al. 226, 415 (81, 115)
- Nikolov, N.S., see Mavridis, L.N., et al. 224, 365 (80, 279)
- Nissen, P.E., see D'Odorico, S., et al. 215, 21
- Nissen, P.E., see Kilian, J. 224, 364 (80, 255)
- Nissen, P.E., see Schuster, W.J. 221, 65
- Nissen, P.E., see Schuster, W.J. 222, 69
- Nissen, P.E., see Tomkin, J., et al. 219, L15
- Nitschelm, C., see Mermilliod, J.C. 226, 421 (81, 401)
- Nobili, A.M., Milani, A., Carpino, M.: Fundamental frequencies and small divisors in the orbits of the outer planets 210, 313
- Noël, F.: Astrolabe observations of Uranus at Santiago 213, 521 (77, 73)
- Nollert, H.-P., Ruder, H., Herold, H., Kraus, U.: The relativistic "looks" of a neutron star 208, 153
- Nollert, H.-P., see Kraus, U., et al. 223, 246
- Nollert, H.-P., see Rebetzky, A., et al. 225, 137
- Nollez, G., see Goldbach, C., et al. 221, 155
- Nomoto, K., see Hashimoto, M., et al. 210, L5
- Norci, L., see Castellani, V., et al. 216, 62
- Nordh, H.L., see Fridlund, C.V.M., et al. 213, 310
- Nordström, B., see Clausen, J.V., et al. 226, 418 (81, 197)
- Nordström, B., see Imbert, M., et al. 226, 421 (81, 339)
- Nordström, B., see Mermilliod, J.-C., et al. 220, 341 (79, 11)
- Nordström, B., see Tjin A Djie, H.R.E., et al. 218, 338 (78, 1)
- North, P., Kroll, R.: The surface gravities of Ap stars: spectroscopic estimates from H $\beta$  profiles and comparison with photometry 218, 343 (78, 325)
- North, P., see Gillet, D., et al. 219, 219
- Noshi, M.N., see Akujor, C.E., et al. 224, 363 (80, 215)
- Nota, A., see Cristiani, S., et al. 215, 409 (77, 161)
- Nussbaumer, H., Schmid, H.M., Vogel, M.: Raman scattering as a diagnostic possibility in astrophysics 211, L27
- Nussbaumer, H., see Isliker, H., et al. 219, 271
- Nussbaumer, H., Vogel, M.: Z Andromedae and the symbiotic phenomenon 213, 137
- Nyman, L.-Å., Bronfman, L., Thaddeus, P.: A CO survey of the Southern Coalsack 216, 185
- Nyman, L.-Å., Millar, T.J.: The detection of CN and HNC mm-wave absorption lines in spiral-arm gas clouds 222, 231
- Nørgaard-Nielsen, H.U., see Hansen, L., et al. 211, L9
- Oberti, P., Veillet, C., Catullo, V.: Lagrangian satellites of Tethys and Dione. I. Reduction of observations 224, 365 (80, 289)
- Oblak, E.: *uvby* photometry of wide visual double stars. III. 224, 364 (80, 249)
- O'Dea, C.P.: Constraints on integrated nuclear rotation measures in core-dominated active galactic nuclei 210, 35
- Ögelmann, H., Zimmermann, H.-U.: Soft X-ray observations of the Vela pulsar PSR 0833-45 214, 179
- Ögelman, H., see Mattox, J.R., et al. 226, 145
- Özel, M.E., Ormes, J.F.: 2CG 013: a "monoenergetic" source of cosmic rays? 208, 247
- Özel, M.E., see Schlickeiser, R., et al. 216, 197
- Ofman, L., see Cupperman, S., et al. 216, 265
- Okamoto, I.: Dissipative processes in relativistic magnetohydrodynamics 211, 476
- Olah, K., Panov, K.P., Pettersen, B.R., Valtaoja, E., Valtaoja, L.: Long-lived active longitudes on the spotted RS CVn star  $\sigma$  Geminorum 218, 192
- Olano, C.A., see Bajaja, E., et al. 219, 363 (78, 345)
- Olano, C.A., see Menten, K.M., et al. 223, 258
- Olberg, M., see Booth, R.S., et al. 216, 315

- Oliva, E., Moorwood, A.F.M., Danziger, I.J.: Infrared spectroscopy of supernova remnants **214**, 307
- Oliva, E., see Salvati, M., et al. **208**, L5
- Olofsson, G., see Fridlund, C.V.M., et al. **213**, 310
- Olofsson, H., see Sopka, R.J., et al. **210**, 78
- Olofsson, K.: Spectral evolutionary synthesis models of metal-poor star forming regions **224**, 366 (**80**, 317)
- Omout, A., see Nercissian, E., et al. **210**, 225
- Onaka, T., de Jong, T., Willems, F.J.: A study of M Mira variables based on IRAS LRS observations. I. Dust formation in the circumstellar shell **218**, 169
- Onaka, T., de Jong, T., Willems, F.J.: A study of M Mira variables based on IRAS LRS observations. II. Models fits and derived parameters for 109 Miras **226**, 418 (**81**, 261)
- Opher, R., see Canalle, J.B.G. **219**, 334
- Opher, R., see Jatenco-Pereira, V. **209**, 327
- Opradolce, L., see Gargaud, M., et al. **208**, 251
- Orio, M., see Müller, E., et al. **220**, 167
- Ormes, J.F., see Özel, M.E. **208**, 247
- Ortolani, S., Gratton, R.G.: Spectroscopy and deep photometry of Pal 3 and C0422-213 **223**, 375 (**79**, 155)
- Ortolani, S., see Aurière, M. **221**, 20
- Ortolani, S., see Aurière, M., et al. **214**, 113
- Ortolani, S., see Chiosi, C., et al. **218**, 339 (**78**, 89)
- Ortolani, S., see Chiosi, C., et al. **219**, 167
- Ortolani, S., see Gratton, R.G. **211**, 41
- Osborne, J.L., see Giler, M., et al. **217**, 311
- Pacheco, A.F., see Membrado, M., et al. **217**, 92
- Pacheco, F., Pucacco, G., Ruffini, R., Sebastiani, G.: Equilibrium figures of anisotropic heterogeneous S-type Riemann ellipsoids **210**, 42
- Pacini, F., see Salvati, M., et al. **208**, L5
- Padovani, P.: The evolution of the Eddington ratio for active galactic nuclei **209**, 27
- Padielli, L., see Spangler, S., et al. **209**, 315
- Pajot, F., Gispert, R., Lamarre, J.M., Peyturaux, R., Pomerantz, M.A., Puget, J.L., Serra, G., Maurel, C., Pfeiffer, R., Renault, J.C.: Observations of the submillimetre integrated galactic emission from the South Pole **223**, 107
- Pajot, F., see Giard, M., et al. **215**, 92
- Pakull, M.W., see Bonnet-Bidaud, J.M., et al. **213**, 97
- Pakull, M.W., see Chevalier, C., et al. **217**, 108
- Pakull, M.W., see Motch, C. **214**, L1
- Pakull, M.W., see Motch, C., et al. **219**, 158
- Palla, F., Giovanardi, C.: A search for H<sub>2</sub>O maser emission in the Serpens region **223**, 267
- Palla, F., see Giovanardi, C. **215**, 409 (**77**, 157)
- Pallavicini, R., see Cappelli, A., et al. **213**, 226
- Pallavicini, R., see Pasquini, L., et al. **213**, 261
- Pallavicini, R., see Pasquini, L., et al. **226**, 225
- Pallé, P.L., Pérez Hernández, F., Roca Cortés, T., Isaak, G.R.: Observations of solar p-modes with  $l \leq 5$  **216**, 253
- Pallé, P.L., Régulo, C., Roca Cortés, T.: Solar cycle induced variations of the low  $l$  solar acoustic spectrum **224**, 253
- Pallé, P.L., see Belmonte, J.A., et al. **221**, 41
- Pallé, P.L., see Isaak, G.R., et al. **208**, 297
- Pallottino, G.V., see Amaldi, E., et al. **216**, 325
- Panagi, P., see Byrne, P.B., et al. **214**, 227
- Panagia, N., see D'Odorico, S., et al. **215**, 21
- Pandey, A.K., see Sagar, R. **223**, 379 (**79**, 407)
- Pandey, U.S.: X-ray absorption dips in low-mass X-ray binaries: an evidence for tidal feed back? **221**, 62
- Panov, K.P., see Hawley, S.L., et al. **220**, 218
- Panov, K.P., see Olah, K., et al. **218**, 192
- Paolicchi, P., see Cellino, A., et al. **219**, 320
- Pap, J., see Fröhlich, C. **220**, 272
- Paparo, M., see Breger, M., et al. **214**, 209
- Papini, G., Valluri, S.-R.: Photoproduction of high-frequency gravitational radiation by galactic and extragalactic sources **208**, 345
- Papoular, R., Conard, J., Giuliano, M., Kister, J., Mille, G.: A coal model for the carriers of the unidentified IR bands **217**, 204
- Pâquet, P., see Djurovic, D. **218**, 302
- Paresce, F., see Clampin, M. **225**, 578
- Parisi, M., see Iucci, N., et al. **226**, 421 (**81**, 367)
- Parkinson, C.D., see McConnell, J.C., et al. **225**, L9
- Parma, P., see Fanti, C., et al. **217**, 44
- Parmar, A.N., see Bonnet-Bidaud, J.M., et al. **213**, 97
- Parmar, A.N., Stella, L., Giommi, P.: EXOSAT observations of five luminous globular cluster X-ray sources **222**, 96
- Parrao, L., see Arellano Ferro, A., et al. **214**, 123
- Parrao, L., see Peniche, R., et al. **209**, 59
- Parthasarathy, M., Pottasch, S.R.: The far-infrared (IRAS) excess in BQ [ ] and related stars **225**, 521
- Parvaneh, D.L., Schatzman, E., Lagage, P.O.: On the origin of high energy cosmic rays. I. Pregalactic explosion **213**, 287
- Pasian, F., see Wamsteker, W., et al. **220**, 341 (**79**, 1)
- Pasquini, L., Pallavicini, R., Dravins, D.: Absolute flux calibration of the H and K lines of Ca II: chromospheric radiative losses in F and G-type stars **213**, 261
- Pasquini, L., Schmitt, J.H.M.M., Harnden, F.R., Jr., Tozzi, G.P., Krautter, J.: X-ray and optical observations of LDS 587 **218**, 187
- Pasquini, L., Schmitt, J.H.M.M., Pallavicini, R.: X-ray spectroscopy of RS CVn stars with EXOSAT **226**, 225
- Pastetter, L., Ritter, H.: Evolution of close binary systems that undergo a dynamically stable late case C mass transfer **214**, 186
- Patule, G., Fouqué, P., Bottinelli, L., Gouguenheim, L.: An extragalactic database. I. The catalogue of principal galaxies **224**, 366 (**80**, 299)
- Pauldrach, A.W.A., see Gabler, R., et al. **226**, 162
- Pauldrach, A.W.A., see Groenewegen, M.A.T., et al. **221**, 78
- Pauldrach, A.W.A., see Kudritzki, R.P., et al. **219**, 205
- Pauzat, F., Ellinger, Y.: The lowest two electronic states of the hexatriynyl radical: C<sub>6</sub>H **216**, 305
- Pavlovski, K., Maitzen, H.M.:  $\Delta\alpha$ -photometry of Be/shell stars **217**, 391 (**77**, 351)
- Pavlovski, K., see Andersen, J., et al. **215**, 272
- Pavlovski, K., see Maitzen, H.M. **219**, 253
- Pavlovski, K., see Maitzen, H.M. **226**, 421 (**81**, 335)
- Pavlov, G.G., see Kaminker, A.D., et al. **220**, 117
- Pécontal, E., see Adam, G., et al. **208**, L15
- Pedersen, H., see Boer, M., et al. **214**, 148
- Pedersen, H., see Chevalier, C., et al. **210**, 114
- Pedersen, H., see van Paradijs, J., et al. **225**, L5
- Pedlar, A., see Meaburn, J., et al. **208**, 17
- Pedlar, A., see Unger, S.W., et al. **208**, 14
- Pédoussaut, A., Carquillat, J.M., Ginestet, N.: Contribution to the study of F-G-K-M binaries. V. Orbital elements of the spectroscopic binary HD 189578 **219**, 364 (**78**, 441)
- Pehlemann, E., von der Lüh, O.: Technical aspects of the speckle masking phase reconstruction algorithm **216**, 337

- Pel, J.W., Trefzger, C.F., Blaauw, A.: *Erratum: Walraven VBLUW photometry in basal halo fields. I. Photometric data for Selected Areas SA141 (South Galactic Pole), SA94 and SA107* 217, 394 (77, 513)
- Peletier, R.F., Lauberts, A., Valentijn, E.A.: Simulated aperture-photometry on CCD-frames for 67 Southern Galaxies in *B* and *R* 217, 391 (77, 339)
- Pelletier, G., Roland, J.: Two-fluid model of superluminal radio sources: application to cosmology 224, 24
- Peña, J.H., see Peniche, R., et al. 209, 59
- Peñalver, J., see Cernicharo, J., et al. 222, L1
- Peng, R.S.: Time variation of type I H<sub>2</sub>O masers. I. Long term flux density variation of the W 49 N H<sub>2</sub>O maser 216, 165
- Peng, R.S.: Time variation of type I H<sub>2</sub>O masers. II. A preliminary model for the time variation of H<sub>2</sub>O masers in ordinary, physically quiet environments 216, 173
- Peniche, R., Gomez, T., Parrao, L., Peña, J.H.: Photometric analysis of RR Lyrae stars. I. The multiperiodic ST CVn 209, 59
- Penninx, W., Damen, E., Tan, J., Lewin, W.H.G., van Paradijs, J.: EXOSAT observations of the X-ray burst source 4U 1608-52 208, 146
- Péroult, M., see Le Bourlot, J., et al. 219, 279
- Peresty, R., see Hudec, R., et al. 225, 411
- Pérez, E., Machado, A., Pottasch, S.R., García-Lario, P.: IRAS 09149-6206, a new Seyfert I galaxy 215, 262
- Pérez Hernández, F., see Pallé, P.L., et al. 216, 253
- Perley, R.A., see Meisenheimer, K., et al. 219, 63
- Pernier, B., see Burki, G., et al. 213, L26
- Perrier, C., see Chalabaev, A.A., et al. 210, L1
- Perrier, C., see Le Bertre, T., et al. 225, 417
- Perrin, J.-M., Lamy, P.L.: The color of the zodiacal light and the size distribution and composition of interplanetary dust 216, 288
- Perrin, J.-M., Sivan, J.-P.: Diffuse interstellar extinction: the nature of the dust component 219, 286
- Perrin, M.-N., see Cayrel de Strobel, G., et al. 225, 369
- Perryman, M.A.C., Jakobsen, P., Colina, L., Lelièvre, G., Macchetto, F., Nieto, J.L., di Serego Alighieri, S.: An improved technique for the search for optical emission from radio pulsars, and its application to PSR 0301+19, 1919+21 and 2303+30 215, 195
- Persi, P., see Preite-Martinez, A. 218, 264
- Persi, P., see Tapia, M., et al. 225, 488
- Petersen, J.O.: Studies of Cepheid-type variability. VI. Two- and three-mode resonances in Cepheid models 226, 151
- Petford, A.D., Blackwell, D.E.: Stellar integrated fluxes in the wavelength range 380 nm–900 nm derived from Johnson 13-colour photometry 219, 366 (78, 511)
- Petford, A.D., see Booth, A.J., et al. 218, 167
- Petford, A.D., see Grevesse, N., et al. 208, 157
- Petit, M., see Baize, P. 217, 394 (77, 497)
- Petitjean, P., see Bergeron, J., et al. 213, 61
- Peton, A., see Fehrenbach, Ch., et al. 224, 367 (80, 433)
- Petrosian, A.R., see Turatto, M., et al. 217, 79
- Pettersen, B.R.: Chromospheric lines in red dwarf flare stars. III 209, 279
- Pettersen, B.R., Hawley, S.L.: A spectroscopic survey of red dwarf flare stars 217, 187
- Pettersen, B.R., see Ambruster, C.W., et al. 208, 198
- Pettersen, B.R., see Hawley, S.L., et al. 220, 218
- Pettersen, B.R., see Olah, K., et al. 218, 192
- Pettini, M., see D'Odorico, S., et al. 215, 21
- Peyturaux, R., see Pajot, F., et al. 223, 107
- Pfeiffer, R., see Pajot, F., et al. 223, 107
- Phillips, S.: The Tully-Fisher relation and galaxy mass to light ratios 211, 259
- Phillips, J.P., Mampaso, A.: CO  $J=2\rightarrow 1$  core mapping of the star-burst galaxy M 82 218, 24
- Phillips, J.P., Mampaso, A.: A CO  $J=2\rightarrow 1$  survey of type I post-main-sequence nebulae 218, 257
- Phillips, J.P., see Mampaso, A., et al. 220, 235
- Phillips, J.P., see Riera, A., et al. 210, 351
- Phillips, J.P., see Vilchez, J.M., et al. 213, 303
- Pichon, B., see Luminet, J.-P. 209, 85
- Pichon, B., see Luminet, J.-P. 209, 103
- Pickett, H.M., see Gulkis, S., et al. 213, 465
- Pickles, A.J., see Manteiga, M., et al. 210, 66
- Pick, M., see Mangeney, A. 224, 242
- Pick, M., see Roelof, E.C. 210, 417
- Picquette, M., see Mauron, N., et al. 218, 213
- Piehler, G., Kegel, W.H.: The relative importance of collisional and chemical pumping and radiative transfer effects in cosmic OH sources 214, 339
- Pierre, M., see Shaver, P.A. 220, 35
- Pietraszewski, K.A.R.B., see Belmonte, J.A., et al. 221, 41
- Pigatto, L., see Mazzei, P. 213, L1
- Pirola, V., see Andersen, J., et al. 215, 272
- Pirola, V., see Belyakina, T.S., et al. 223, 119
- Pijpers, F.P., Habing, H.J.: Driving the stellar wind of AGB stars by acoustic waves; exploration of a simple model 215, 334
- Pijpers, F.P., Hearn, A.G.: A model for a stellar wind driven by linear acoustic waves 209, 198
- Pilipp, W., see Havnes, O., et al. 217, L13
- Pineau des Forêts, G., see Chièze, J.P. 221, 89
- Pişmiş, P., see Mampaso, A., et al. 220, 235
- Pitz, E., see Leinert, C. 210, 399
- Pizzella, G., see Amaldi, E., et al. 216, 325
- Pizzo, V.J., see Steiner, O. 211, 447
- Planesas, P., Gómez-González, J., Martín-Pintado, J.: CO observations in NGC 1068: physical conditions of the molecular clouds and star formation 216, 1
- Planesas, P., see Bachiller, R., et al. 210, 366
- Planesas, P., see Bujarrabal, V., et al. 219, 256
- Pöppel, W.G.L., see Bajaja, E., et al. 219, 363 (78, 345)
- Poetzel, R., Mundt, R., Ray, T.P.: Z CMa: a large-scale high velocity bipolar outflow traced by Herbig-Haro objects and a jet 224, L13
- Poetzel, R., see Dachs, J., et al. 219, 365 (78, 487)
- Polichetti, A., see Barone, P., et al. 209, 435
- Pols, O.R., see Waters, L.B.F.M., et al. 220, L1
- Pomerantz, M.A., see Pajot, F., et al. 223, 107
- Popović, M.M., see Dimitrijević, M.S. 217, 201
- Popravko, G.V., see Moskalenko, E.I., et al. 223, 141
- Porceddu, I., see Benvenuti, P. 223, 329
- Poretti, E.: Non-radial oscillations in HR 1225,  $\sigma^1$  Eridani and HR 547 220, 144
- Poretti, E., see Mantegazza, L., et al. 208, 91
- Porter, N.A., see Fegan, D.J., et al. 211, L1
- Portilla, M., see Buitrago, J., et al. 221, 258
- Postnov, K.A., see Kolosov, D.E., et al. 215, L21
- Potgieter, M.S., Le Roux, J.A.: A numerical model for a cosmic ray modulation barrier in the outer heliosphere 209, 406

- Pottasch, S.R., Acker, A.: Evolution of planetary nebulae in the galactic bulge **221**, 123
- Pottasch, S.R., see Gathier, R. **209**, 369
- Pottasch, S.R., see Manchado, A. **222**, 219
- Pottasch, S.R., see Manchado, A., et al. **214**, 139
- Pottasch, S.R., see Manchado, A., et al. **218**, 267
- Pottasch, S.R., see Parthasarathy, M. **225**, 521
- Pottasch, S.R., see Pérez, E., et al. **215**, 262
- Pottasch, S.R., see Sahu, M., et al. **218**, 221
- Pottasch, S.R., see Zijlstra, A.A. **216**, 245
- Pottasch, S.R., see Zijlstra, A.A., et al. **217**, 157
- Pottasch, S.R., see Zijlstra, A.A., et al. **223**, 378 (79, 329)
- Poulain, P., see Fraix-Burnet, D., et al. **221**, L1
- Poutanen, M., see Belyakina, T.S., et al. **223**, 119
- Praderie, F., see Catala, C., et al. **221**, 273
- Praderie, F., see Donati, J.-F., et al. **225**, 467
- Praderie, F., see Güdel, M., et al. **217**, L9
- Prangée, R., see McConnell, J.C., et al. **225**, L9
- Prantzos, N.: Gamma-ray lines from radioactive nuclei produced in hydrostatic stellar burning phases **223**, 136
- Prasanna, A.R.: Equilibrium configuration for an inertially dragged viscous fluid around a slowly rotating compact object **217**, 329
- Prein, J.J., see van Genderen, A.M., et al. **223**, 376 (79, 263)
- Preite-Martinez, A., Acker, A., Köppen, J., Stenholm, B.: The energy-balance temperature of central stars of galactic planetary nebulae **226**, 421 (81, 309)
- Preite-Martinez, A., Persi, P.: New near-IR photometry of southern planetary nebulae **218**, 264
- Preite-Martinez, A., see Amoretti, M., et al. **211**, 250
- Preston, H.L., see Icke, V. **211**, 409
- Prévot, L., Rousseau, J., Martin, N.: Transverse motion, rotation and velocity dispersions of the Large Magellanic Cloud **225**, 303
- Prévot, L., see Acker, A., et al. **226**, 137
- Prevot, L., see Cacciari, C., et al. **209**, 141
- Prévot, L., see Imbert, M., et al. **226**, 421 (81, 339)
- Prévot, L., see Walborn, N.R., et al. **219**, 229
- Prévot, M.-L., see Acker, A., et al. **226**, 137
- Prévot, M.-L., see Walborn, N.R., et al. **219**, 229
- Price, J.C., see Amaldi, E., et al. **216**, 325
- Priest, E.R., see Ballester, J.L. **225**, 213
- Priest, E.R., see Démoulin, P. **214**, 360
- Priest, E.R., see Démoulin, P., et al. **211**, 428
- Priest, E.R., see Démoulin, P., et al. **221**, 326
- Priest, E.R., see Dixon, A.M., et al. **225**, 156
- Priest, E.R., see Heyvaerts, J.F. **216**, 230
- Prokhorov, M.E., see Kolosov, D.E., et al. **215**, L21
- Prugniel, P., Davoust, E., Nieto, J.-L.: Hierarchical pairs and the evolution of elliptical galaxies **222**, 5
- Ptuskin, V.S., see Berezinsky, V.S. **215**, 399
- Ptuskin, V.S., see Giler, M., et al. **217**, 311
- Pucacco, G., see Pacheco, F., et al. **210**, 42
- Pudritz, R.E., see Monin, J.-L., et al. **215**, L1
- Puget, J.L., see Pajot, F., et al. **223**, 107
- Puls, J., see Gabler, R., et al. **226**, 162
- Puls, J., see Kudritzki, R.P., et al. **219**, 205
- Puls, J., see Kudritzki, R.P., et al. **226**, 235
- Pylyser, E.H.P., Savonije, G.J.: The evolution of low-mass close binary systems with a compact component. II. Systems captured by angular momentum losses **208**, 52
- Pylyser, E.H.P., see Coté, J. **218**, 131
- Pyper, D.M., see Adelman, S.J., et al. **226**, 418 (81, 221)
- Qian, S.J., see Quirrenbach, A., et al. **226**, L1
- Qiuhe Peng, see Yongheng Zhao, et al. **223**, 147
- Quenby, J.J., see Lieu, R., et al. **208**, 351
- Quirrenbach, A., see Wambsganss, J., et al. **224**, L9
- Quirrenbach, A., Witzel, A., Qian, S.J., Krichbaum, T., Hummel, C.A., Alberdi, A.: Rapid radio polarization variability in the quasar 0917+624 **226**, L1
- Raadu, M.A., see Schmieder, B., et al. **213**, 402
- Rabattu, X., see de Jager, C., et al. **211**, 157
- Rahunen, T., see Vilhu, O., et al. **208**, 201
- Ramella, M., Gerbaldi, M., Faraggiana, R., Böhm, C.: "Normal" main sequence A0 stars of low rotational velocity **209**, 233
- Rapagnani, R., see Amaldi, E., et al. **216**, 325
- Ratag, M., see Zijlstra, A.A., et al. **217**, 157
- Raubenheimer, B.C., see De Jager, O.C., et al. **221**, 180
- Raveendran, A.V., Kameswara Rao, N.: Long-term polarimetric behaviour of the carbon Mira R Leporis **215**, 63
- Ray, T.P., see Poetzel, R., et al. **224**, L13
- Rebetzky, A., Bock, U., Herold, H., Kraus, U., Maile, T., Nollert, H.-P., Ruder, H., Wolf, K.: Towards a self-consistent description of accretion columns. II. Frequency-dependent radiation hydrodynamics **225**, 137
- Rebetzky, A., see Kraus, U., et al. **223**, 246
- Rebetzky, A., see Maile, T., et al. **223**, 251
- Rebhan, H., see Schoembs, R. **224**, 42
- Rebolo, R., García-López, R., Beckmann, J.E., Vladilo, G., Foing, B.H., Crivellari, L.: Chromospheres of late-type active and quiescent dwarfs. I. An atlas of high resolution Ca II H profiles **224**, 362 (80, 135)
- Rebolo, R., see Foing, B.H., et al. **224**, 362 (80, 189)
- Rebrion, C., see Marquette, J.B., et al. **213**, L29
- Refsdal, S., see Kayser, R., et al. **214**, 4
- Rego, M., Zamorano, J., González-Riestra, R.: Search for H $\alpha$  emission line galaxies **223**, 380 (79, 443)
- Régulo, C., see Pallé, P.L., et al. **224**, 253
- Reich, W., see Fürst, E., et al. **209**, 361
- Reich, W., see Fürst, E., et al. **223**, 66
- Reich, W., see Seiradakis, J.H., et al. **226**, 421 (81, 291)
- Reif, K., see Becker, R., et al. **214**, 402
- Reif, K., see Fürst, E., et al. **209**, 361
- Reimers, D., Clavel, J., Groote, D., Engels, D., Hagen, H.J., Naylor, T., Wamsteker, W., Hopp, U.: The luminous quasar HS 1700+6416 and the shape of the "big bump" below 500 Å **218**, 71
- Reimers, D., Koester, D.: Spectroscopic identification of white dwarfs in galactic clusters. V. NGC 3532 **218**, 118
- Reimers, D., Schröder, K.-P.: Observations of modulation and phase displacement of the stellar wind in six red giant spectroscopic binaries **214**, 261
- Reimers, D., see Koester, D. **217**, L1
- Reimers, D., see Koester, D. **223**, 326
- Reimers, D., see Schröder, K.-P. **208**, 223
- Reimers, D., see Toussaint, F. **226**, L17
- Reiner, M.J., Stone, R.G.: Model interpretation of type III radio burst characteristics. II. Temporal aspects **217**, 251
- Reinsch, K., see Siegel, N., et al. **225**, 97
- Reipurth, B.: Herbig-Haro objects in flows from young stars in Orion **220**, 249
- Reitermann, A., see Jüttner, A., et al. **226**, 415 (81, 93)
- Remy, M., see Heydari-Malayeri, M., et al. **222**, 41
- Renard, L., see Soubeyran, A., et al. **222**, 27



- Renault, J.C., see Pajot, F., et al. 223, 107
- Rengarajan, T.N., see Iyengar, K.V.K., et al. 221, 250
- Renson, P.: *Erratum et addendum*: Catalogue of Ap and Am stars in open clusters 219, 366 (78, 533)
- Renson, P., see Manfroid, J. 223, 187
- Renton, R.E., see Belmonte, J.A., et al. 221, 41
- Reynolds, P.T., see Fegan, D.J., et al. 211, L1
- Rhee, G.F.R.N., see Roland, J. 213, 10
- Rhee, G.F.R.N., Webb, J.K., Katgert, P.: A search for Lyman- $\alpha$  emitting objects in a structure between a quasar pair at a redshift of 2 217, 1
- Ricci, F., see Amaldi, E., et al. 216, 325
- Rice, J.B., Wehlau, W.H., Khokhlova, V.L.: Mapping stellar surfaces by Doppler imaging: technique and application 208, 179
- Richard, C., see Burki, G., et al. 213, L26
- Richardson, K.J., Sandell, G., Krisciunas, K.: Small-scale structure in the DR 21/DR 21 (OH) region: a high resolution continuum study at millimetre and submillimetre wavelengths 224, 199
- Richardson, K.J., Sandell, G., White, G.J., Duncan, W.D., Krisciunas, K.: A high resolution millimetre and submillimetre study of W 3 221, 95
- Richichi, A.: Model-independent retrieval of brightness profiles from lunar occultation lightcurves in the near infrared domain 226, 366
- Richichi, A., see Wampler, E.J. 217, 31
- Richter, O.-G.: The Hydra I cluster of galaxies. V. A catalogue of galaxies in the cluster area 215, 410 (77, 237)
- Richter, O.-G., see Huchtmeier, W.K. 210, 1
- Richtler, T.: Strömgren photometry of late-type supergiants in the Small Magellanic Cloud 211, 199
- Richtler, T., Kaluzny, J.: Photometry and spectroscopy of the open cluster NGC 2112 226, 418 (81, 225)
- Richtler, T., Spite, M., Spite, F.: Chemical evolution in the Magellanic Clouds. IV. Metal abundance of a star in the young globular cluster NGC 1818 in the Large Magellanic Cloud 225, 351
- Rickard, L.J., see Verter, F. 225, 27
- Ricort, G., see Druesne, P., et al. 217, 229
- Riera, A., Mampaso, A., Phillips, J.P., Vilchez, J.M.: Optical spectroscopy and near-infrared mapping of S 106 210, 351
- Riera, A., see Mampaso, A., et al. 220, 235
- Riera, A., see Vilchez, J.M., et al. 213, 303
- Rigaut, F., see Hammer, F. 226, 45
- Rigaut, F., see Hammer, F., et al. 208, L7
- Righini, A., see Bonaccini, D., et al. 217, 368
- Rimmele, Th., see von der Luehe, O., et al. 224, 351
- Rimmele, T., Schröter, E.H.: The variation of the cell size and velocities of the supergranulation with heliographic latitude 221, 137
- Rindler, W., Suson, D.: How to determine a Tolman-Bondi universe from ideal observable and theoretical relations 218, 15
- Ritter, H., see D'Antona, F., et al. 225, 391
- Ritter, H., see Pastetter, L. 214, 186
- Robin, A.C.: Galactic population synthesis: G and K giant calibration 225, 69
- Robin, A.C., see Crézé, M., et al. 211, 1
- Roca Cortés, T., see Belmonte, J.A., et al. 221, 41
- Roca Cortés, T., see Isaak, G.R., et al. 208, 297
- Roca Cortés, T., see Pallé, P.L., et al. 216, 253
- Roca Cortés, T., see Pallé, P.L., et al. 224, 253
- Rocca, A.: Tidal effects in rotating close binaries 213, 114
- Rocher, P., see Arlot, J.-E. 223, 381 (80, 1)
- Rochowicz, K., see Vreux, J.M., et al. 226, 421 (81, 353)
- Rodonò, M., see de Jager, C., et al. 211, 157
- Rodonò, M., see Doyle, J.G., et al. 223, 219
- Rodonò, M., see Linsky, J.L., et al. 211, 173
- Rodonò, M., see Neff, J.E., et al. 215, 79
- Rodriguez, L.F., see Garay, G., et al. 215, 101
- Rodriguez, L.F., see Scalise, E., Jr., et al. 221, 105
- Rodriguez, L.F., see Roth, M., et al. 222, 211
- Rodríguez-Pascual, P.M., Santos-Lleó, M., Clavel, J.: A comparative study of the discrete and cross correlation techniques: an application to the NGC 5548 IUE light-curves 219, 101
- Roelfsema, P.R., Goss, W.M., Geballe, T.R.: Infrared and radio recombination line observations of DR 21 222, 247
- Roelof, E.C., Pick, M.: Type III radio bursts in a fibrous corona 210, 417
- Rönnäng, B., see Tang, G., et al. 216, 31
- Rönnback, J., see Bergvall, N., et al. 222, 49
- Röser, H.P., see Krügel, E., et al. 211, 419
- Röser, H.P., see Schmid-Burgk, J., et al. 215, 150
- Röser, H.-J., see Meisenheimer, K., et al. 219, 63
- Röttgering, H.J.A.: Efficiency of 1612 MHz maser emission from OH/IR stars 222, 125
- Röttgering, H.J.A., see van Genderen, A.M., et al. 213, 161
- Röttgering, H.J.A., see van Genderen, A.M., et al. 223, 376 (79, 263)
- Roger, R.S., see Joncas, G., et al. 219, 303
- Roger, R.S., see Vallée, J.P. 213, 520 (77, 31)
- Rohlfs, R., Herbstmeier, U., Mebold, U., Winnberg, A.: Collision of a high-velocity cloud with a dust cloud in the galactic halo 211, 402
- Roland, J., Rhee, G.F.R.N.: Determination of the level of the MHD turbulence in 4C 21.44 213, 10
- Roland, J., see Pelletier, G. 224, 24
- Roos, M.: The determination of the neutrino mass in neutrino astronomy 218, 334
- Roques, S., see Fraix-Burnet, D., et al. 217, 387
- Rosado, M., see Laval, A., et al. 208, 230
- Rosino, L., see Barbon, R., et al. 214, 131
- Rosino, L., see Barbon, R., et al. 220, 83
- Rosner, R., Musielak, Z.E.: The generation of MHD waves by forced turbulence in a weakly magnetized fluid 219, L27
- Rosselló, G., see Trullols, E., et al. 226, 415 (81, 47)
- Rossi, P., see Massaglia, S., et al. 209, 399
- Rothenflug, R., see Ballet, J. 218, 277
- Rothenflug, R., see Ballet, J., et al. 211, 217
- Roth, M., see Tapia, M., et al. 225, 488
- Roth, M., Tapia, M., Rubio, M., Rodríguez, L.F.: Near-infrared images of young objects in the HH 1-2 and HH 3 regions 222, 211
- Rouan, D., see Lacombe, F., et al. 215, 211
- Rouan, D., see Monin, J.-L., et al. 215, L1
- Roueff, E., see Abgrall, H. 223, 378 (79, 313)
- Rousseau, J., see Prévot, L., et al. 225, 303
- Rowe, B.R., see Marquette, J.B., et al. 213, L29
- Roxburgh, I.W.: Integral constraints on convective overshooting 211, 361
- Różyczka, M., see Yorke, H.W., et al. 216, 207

- Różyczka, M., Yorke, H.W., Bodenheimer, P., Müller, E., Hashimoto, M.: Models of head-on collisions between a white dwarf and a low-mass main-sequence star **208**, 69
- Rubio, M., see Roth, M., et al. **222**, 211
- Rucinski, D., Fahr, H.J.: The influence of electron impact ionization on the distribution of interstellar helium in the inner heliosphere; possible consequences for determination of interstellar helium parameters **224**, 290
- Ruder, H., see Finkbeiner, B., et al. **225**, 479
- Ruder, H., see Kraus, U., et al. **223**, 246
- Ruder, H., see Maile, T., et al. **223**, 251
- Ruder, H., see Nollert, H.-P., et al. **208**, 153
- Ruder, H., see Rebetzky, A., et al. **225**, 137
- Rüdiger, G., see Tuominen, I. **217**, 217
- Rufener, F.: Catalogue of stars measured in the Geneva Observatory photometric system (fourth edition) **219**, 365 (78, 469)
- Rufener, F., see Burki, G., et al. **213**, L26
- Ruffini, R., see Busarello, G., et al. **213**, 80
- Ruffini, R., see Calzetti, D., et al. **226**, 1
- Ruffini, R., see Merafina, M. **221**, 4
- Ruffini, R., see Pacheco, F., et al. **210**, 42
- Rugers, M., see van der Veen, W.E.C.J. **226**, 183
- Rusconi, L., see Doazan, V., et al. **210**, 249
- Russo, G., see Milano, L., et al. **210**, 181
- Russo, G., see Wamsteker, W., et al. **220**, 341 (79, 1)
- Rutten, R.G.M., Schrijver, C.J., Zwaan, C., Duncan, D.K., Mewe, R.: Magnetic structure in cool stars. XVI. Emissions from the outer atmospheres of M-type dwarfs **219**, 239
- Ruzmaikin, A., see Krashenninnikova (Baryshnikova), et al. **213**, 19
- Rydberg, A., see Booth, R.S., et al. **216**, 315
- Sabbadin, F., see Cappellaro, E., et al. **218**, 241
- Sadzakov, S., Dačić, M.: A catalogue of right ascensions and declinations of FK4 stars **217**, 392 (77, 411)
- Sagar, R., Pandey, A.K.: A bibliography of colour magnitude diagram studies of star clusters in the Magellanic Clouds **223**, 379 (79, 407)
- Sahade, J., see Brandt, E., et al. **215**, 331
- Sahai, R., Claussen, M.J., Masson, C.R.: The centimeter radio continuum from IRC+10216 and other late-type stars with mass-loss envelopes **220**, 92
- Sahal-Bréchot, S., see Bommier, V., et al. **211**, 230
- Sahu, K.C., see Sahu, M., et al. **218**, 221
- Sahu, M., Sahu, K.C., Pottasch, S.R.: IRAS observations of the star-forming dark cloud ESO 210-6 A and the associated near-infrared source HH 47/46 IRS **218**, 221
- Said, S.S., see Stephenson, F.R. **215**, 181
- Saito, S., see Mikami, H., et al. **217**, L5
- Salati, P., see Bouquet, A. **217**, 270
- Salter, C.J., Chini, R., Haslam, C.G.T., Junor, W., Kreysa, E., Mezger, P.G., Spencer, R.E., Wink, J.E., Zylka, R.: 230 GHz observations of the radio galaxies Cygnus A and Virgo A **220**, 42
- Salter, C.J., Emerson, D.T., Steppe, H., Thum, C.: Observations at 90 and 142 GHz of nine extended galactic radio sources **225**, 167
- Salter, C.J., see Mezger, P.G., et al. **209**, 337
- Salvador-Solé, E., see Jordana Rdz, J.J., et al. **209**, 15
- Salvati, M., Pacini, F., Oliva, E., Bandiera, R.: Implications of the millimeter emission from Supernova 1987A **208**, L5
- Samimi, J., see Sobouti, Y. **214**, 92
- Sánchez, O., see Chavarria-K., C., et al. **215**, 51
- Sánchez-Almeida, J., Collados, M., del Toro Iniesta, J.C.: On the generation of the net circular polarization observed in solar faculae **222**, 311
- Sancisi, R., see Wakker, B.P., et al. **226**, 57
- Sandell, G., see Richardson, K.J., et al. **221**, 95
- Sandell, G., see Richardson, K.J., et al. **224**, 199
- Sanders, D.B., Scoville, N.Z., Zensus, A., Soifer, B.T., Wilson, T.L., Zylka, R., Steppe, H.: Detection of CO(1→0) emission from infrared quasars and luminous Seyfert galaxies **213**, L5
- Sandqvist, Aa.: 2-mm H<sub>2</sub>CO emission in the Sgr A molecular complex at the Galactic Center **223**, 293
- Sandqvist, Aa., Elfhag, T., Lindblad, P.O.: CO along the minor axis of M 31 **218**, 39
- Sandqvist, Aa., see Fridlund, C.V.M., et al. **213**, 310
- Santos-Lleó, M., see Rodríguez-Pascual, P.M., et al. **219**, 101
- Sanzovo, G.C., see Gregorio Hetem, J.C., et al. **223**, 380 (79, 452)
- Sañudo, J., see Membrado, M., et al. **217**, 92
- Sarna, M.J.: Gravity-darkening for stars with a Roche lobe filling convective envelopes in close binary systems **224**, 98
- Sarna, M.J., Fedorova, A.V.: Evolutionary status of W Ursae Majoris-type binaries: evolution into contact **208**, 111
- Sasaki, S.: Minimum planetary size for forming outer Jovian-type planets: stability of an isothermal atmosphere surrounding a protoplanet **215**, 177
- Sato, M., see Ferraz-Mello, S. **225**, 541
- Savanov, I.S., see Belyakina, T.S., et al. **223**, 119
- Savonije, G.J., see Pylyser, E.H.P. **208**, 52
- Sawada, K., Matsuda, T., Anzer, U., Börner, G., Livio, M.: Inhomogeneous wind accretion: comparison between 3D and 2D computations **221**, 263
- Scalise, E., Jr., Rodríguez, L.F., Mendoza-Torres, E.: Water-vapor maser emission from bright, unassociated IRAS point sources **221**, 105
- Scalise, E., see de Jager, C., et al. **211**, 157
- Scalise, Jr., E., see Braz, M.A., et al. **217**, 393 (77, 465)
- Scardia, M., see Bossi, M., et al. **222**, 117
- Schaal, R.E., see de Jager, C., et al. **211**, 157
- Schäfer, F., see Krügel, E., et al. **211**, 419
- Schäfer, F., see Schmid-Burgk, J., et al. **215**, 150
- Schaefer, M.M., see Gulkis, S., et al. **213**, 465
- Schaeffer, R., see Balian, R. **220**, 1
- Schaeffer, R., see Balian, R. **226**, 373
- Schaeffer, R., see Haensel, P., et al. **217**, 137
- Schalinski, C.J., see Marcaide, J.M., et al. **211**, L23
- Schatzman, E., see Parvaneh, D.L., et al. **213**, 287
- Schild, H., see Arnault, Ph., et al. **224**, 73
- Schilizzi, R.T., see Fanti, C., et al. **217**, 44
- Schilke, P., see Becker, R., et al. **211**, L19
- Schinckel, A., see Schlickeiser, R., et al. **216**, 197
- Schlickeiser, R.: PeV inverse Compton gamma rays from Cygnus X-3 **213**, L23
- Schlickeiser, R., Fürst, E.: The origin of flat radio spectra in shell-type supernova remnants **219**, 192
- Schlickeiser, R., Harwit, M., Özel, M.E., Sieber, W., Younis, S.M., Schinckel, A.: Radio measurements in the fields of  $\gamma$ -ray sources. III. The star formation region  $\rho$ -Ophiuchi **216**, 197
- Schlickeiser, R., see Lesch, H., et al. **209**, 427

- Schlickeiser, R., see Lesch, H., et al. 217, 99  
 Schlickeiser, R., see Steinacker, J. 224, 259  
 Schlosser, W., see Schulz, R. 214, 375  
 Schlosser, W., see Schulz, R. 222, 367  
 Schmid, H.M.: Identification of the emission bands at  $\lambda\lambda$  6830, 7088 211, L31  
 Schmid, H.M., see Nussbaumer, H., et al. 211, L27  
 Schmid-Burgk, J., Densing, R., Krügel, E., Nett, H., Röser, H.P., Schäfer, F., Schwaab, G., van der Wal, P., Wattenbach, R.: Extended CO ( $J=7-6$ ) emission from Orion Molecular Cloud 1: hot ambient gas, two hot-outflow sources 215, 150  
 Schmid-Burgk, J., see Krügel, E., et al. 211, 419  
 Schmidt, D.M., see Macklin, R.L., et al. 216, 109  
 Schmidt, J., see Altenhoff, W.J., et al. 222, 323  
 Schmidt-Kaler, Th., see Gochermann, J., et al. 213, 333  
 Schmidt-Kaler, Th., see Seidensticker, K.J. 225, 192  
 Schmidt-Voigt, M.: Time-dependent MHD simulations for cometary plasmas 210, 433  
 Schmieder, B., Raadu, M.A., Démoulin, P., Dere, K.P.: Dynamics of a filament at the boundary of a spot region with magnetic shear 213, 402  
 Schmitt, B., see Grim, R.J.A., et al. 218, 341 (78, 161)  
 Schmitt, D., Schüssler, M.: Non-linear dynamos. I. One-dimensional model of a thin layer dynamo 223, 343  
 Schmitt, J.H.M.M., see Pasquini, L., et al. 218, 187  
 Schmitt, J.H.M.M., see Pasquini, L., et al. 226, 225  
 Schmitz, F., see Baureis, P., et al. 225, 405  
 Schmutz, W., Hamann, W.-R., Wessolowski, U.: Spectral analysis of 30 Wolf-Rayet stars 210, 236  
 Schmutzler, T., Lesch, H.: Electron-ion coupling in Compton-heated plasmas 223, 71  
 Schmutzler, T., see Biermann, P.L., et al. 208, 22  
 Schneider, H., Weiss, W.W.: Pulsating CP 2 stars. I.  $\alpha$  Circini (HD 128898) 210, 147  
 Schneider, H., see Weiss, W.W. 224, 101  
 Schneider, J.: Possible gravitational amplification in the binary pulsar 1957+20 214, 1  
 Schneider, J., see Vanderriest, C., et al. 215, 1  
 Schneider, P.: The number excess of galaxies around high red-shift quasars 221, 221  
 Schneider, P., Kirk, J.G.: Particle acceleration at modified shock fronts. I. The power-law spectrum for relativistic flows 217, 344  
 Schneider, P., see Kayser, R., et al. 214, 4  
 Schneider, P., see Kirk, J.G. 225, 559  
 Schneider, P., see Wambsganss, J., et al. 224, L9  
 Schoembs, R., Rebhan, H.: Simultaneous *UBVRI* photometry of Nova DQ Herculis (1934) 224, 42  
 Schoembs, R., see Hessman, F.V., et al. 213, 167  
 Schönberg, K.: Molecular line spectra from circumstellar envelopes. II. The envelope of IRC+10216 208, 219  
 Schönfelder, V., see von Ballmoos, P., et al. 221, 396  
 Schöning, T., Butler, K.: Stark broadening of He II lines and new results in astrophysical spectroscopy 219, 326  
 Schöning, T., Butler, K.: Stark broadening of He II lines 218, 339 (78, 51)  
 Schöning, T., Butler, K.: *Erratum*: Stark broadening of He II lines 220, 344 (79, 153)  
 Scholz, M., see Bessell, M.S., et al. 213, 209  
 Scholz, M., see Bessell, M.S., et al. 213, 520 (77, 1)  
 Schraml, J.B., see Altenhoff, W.J., et al. 222, 323  
 Schrijver, C.J., see Rutten, R.G.M., et al. 219, 239  
 Schröder, K.-P., Reimers, D.: A study of ultraviolet spectra of  $\zeta$  Aurigae/VV Cephei systems. XI. 22 Vulpeculae: IUE observations of its extended chromosphere and wind with spatial resolution 208, 223  
 Schröder, K.-P., see Reimers, D. 214, 261  
 Schröter, E.H., see Immerschitt, S. 208, 307  
 Schröter, E.H., see Münzer, H., et al. 213, 431  
 Schröter, E.H., see Rimmele, T. 221, 137  
 Schüssler, M., see Ferriz-Mas, A., et al. 210, 425  
 Schüssler, M., see Grossmann-Doerth, U., et al. 221, 338  
 Schüssler, M., see Schmitt, D. 223, 343  
 Schulte-Ladbeck, R.E., see Zickgraf, F.-J. 214, 274  
 Schulz, N.S., Hasinger, G., Trümper, J.: Spectral classification of low-mass X-ray binary (LMXB) energy spectra with color-color diagrams 225, 48  
 Schulz, R., Schlosser, W.: CN-shell structures and dynamics of the nucleus of comet P/Halley 214, 375  
 Schulz, R., Schlosser, W.: *Erratum*: CN-shell structures and dynamics of the nucleus of comet P/Halley 222, 367  
 Schuster, W.J., Nissen, P.E.: *wavy- $\beta$*  photometry of high-velocity and metal-poor stars. II. Intrinsic color and metallicity calibrations 221, 65  
 Schuster, W.J., Nissen, P.E.: *wavy- $\beta$*  photometry of high-velocity and metal-poor stars. III. Metallicities and ages of the halo stars 222, 69  
 Schutte, W.A., see Grim, R.J.A., et al. 218, 341 (78, 161)  
 Schwaab, G., see Krügel, E., et al. 211, 419  
 Schwaab, G., see Schmid-Burgk, J., et al. 215, 150  
 Schwarz, H.E., see Aspin, C., et al. 221, 100  
 Schwarz, U.J., Bregman, J.D., van Gorkom, J.H.: The distribution and kinematics of the ionized gas in the galactic centre region 215, 33  
 Schwarzenberg-Czerny, A.: Stability of accretion in low mass X-ray binaries 210, 174  
 Schwering, P.B.W.: Infrared observations of the Magellanic Clouds. II. The Large Magellanic Cloud 220, 343 (79, 105)  
 Schwering, P.B.W., Israel, F.P.: Infrared observations of the Magellanic Clouds. I. The Small Magellanic Cloud 220, 343 (79, 79)  
 Schwöpe, A.D., Beuermann, K.: A polarimetric study of the magnetic cataclysmic binary BL Hydri 222, 132  
 Schwöpe, A.D., see Beuermann, K. 223, 179  
 Schwöpe, A.D., see Beuermann, K., et al. 219, L7  
 Scoville, N.Z., see Sanders, D.B., et al. 213, L5  
 Seab, C.G., see Snow, T.P. 213, 291  
 Seab, C.G., see Waters, L.B.F.M., et al. 211, 208  
 Sebastiani, G., see Pacheco, F., et al. 210, 42  
 Sedlmayr, E., see Dominik, C., et al. 223, 227  
 Sedmak, G., see Doazan, V., et al. 210, 249  
 Seeds, M.A., see de Jager, C., et al. 211, 157  
 Seidensticker, K.J.: The distance and structure of the Coalsack. I. Photometric data 220, 343 (79, 61)  
 Seidensticker, K.J., Schmidt-Kaler, Th.: The distance and structure of the Coalsack. II. Analysis 225, 192  
 Seidensticker, K.J., see Hanuschik, R.W., et al. 220, 153  
 Seiler, U., see Brosche, P., et al. 220, 318  
 Seiradakis, J.H., Reich, W., Wielebinski, R., Lasenby, A.N., Yusef-Zadeh, F.: Radio continuum observations of the galactic centre at 4.75 and 10.7 GHz 226, 421 (81, 291)  
 Seki, M., see Matsumura, M. 209, 8  
 Selby, M.J., see Booth, A.J., et al. 218, 167  
 Self, M., see Goebel, J., et al. 222, L5

- Semel, M.: Zeeman-Doppler imaging of active stars. I. Basic principles 225, 456
- Semel, M., see Cuiperman, S., et al. 216, 265
- Semel, M., see Donati, J.-F., et al. 225, 467
- Sen, A.K., Joshi, U.C., Deshpande, M.R.: Molecular band polarization in comet P/Halley 217, 307
- Serra, G., see Giard, M., et al. 215, 92
- Serra, G., see Pajot, F., et al. 223, 107
- Servan, B., see Soubeyran, A., et al. 222, 27
- Setti, G., Woltjer, L.: Active galactic nuclei and the spectrum of the X-ray background 224, L21
- Shakhovskaya, N.I., see Belyakina, T.S., et al. 223, 119
- Shakhovskaya, N.I., see Vilhu, O., et al. 222, 179
- Shakhovskoy, N.M., see Belyakina, T.S., et al. 223, 119
- Shamolin, V.M., see Kaminker, A.D., et al. 220, 117
- Sharma, D.P., see Greenhill, J.G., et al. 208, L1
- Shaver, P.A., Pierre, M.: Large-scale anisotropy in the sky distribution of extragalactic radio sources 220, 35
- Shaviv, G., see Hauschildt, P.H., et al. 210, 262
- Shaviv, G., see Hauschildt, P.H., et al. 213, 522 (77, 115)
- Shcherbakov, A.G., see Belyakina, T.S., et al. 223, 119
- Sheffer, E.K., see Bisnovatyi-Kogan, G.S., et al. 221, L7
- Sheffer, E.K., see Kaminker, A.D., et al. 220, 117
- Shenavrin, V.I., see Belyakina, T.S., et al. 223, 119
- Shestaka, I.S., see Moskalenko, E.I., et al. 223, 141
- Shibanov, Y.A., see Kaminker, A.D., et al. 220, 117
- Shigeyama, T., see Hashimoto, M., et al. 210, L5
- Shore, S.N., see Adelman, S.J., et al. 226, 418 (81, 221)
- Shostak, G.S., Skillman, E.D.: Neutral hydrogen observations of the irregular galaxy IC 10 214, 33
- Shukurov, A.M., see Starchenko, S.V. 214, 47
- Shukurov, A., see Krashenninnikova (Baryshnikova), et al. 213, 19
- Sieber, W., see Fürst, E., et al. 209, 361
- Sieber, W., see Schlickeiser, R., et al. 216, 197
- Siegel, N., Reinsch, K., Beuermann, K., van der Woerd, H., Wolff, E.: The photometric periods of the intermediate polar EX Hydrae 225, 97
- Signorini, C., see Iucci, N., et al. 226, 421 (81, 367)
- Sil'chenko, O.K., see Afanasiev, V.L., et al. 213, L9
- Sillanpää, A., see Takalo, L.O. 218, 45
- Sime, D.G., see Harrison, R.A. 208, 274
- Simnett, G.M., Mouradian, Z., Martres, M.-J., Soru-Escaut, I.: Simultaneous rapid X-ray and optical intensity fluctuations from a small part of a flaring active region 224, 284
- Simnett, G.M., see Güdel, M., et al. 220, L5
- Simnett, G.M., see Mouradian, Z., et al. 224, 267
- Simonneau, E., Isern, J., López, R.: Radiative transfer in supernova-like envelopes: curvature and diffusion effects 208, 166
- Simonsen, R.L., see Boer, M., et al. 214, 148
- Simon, T., see Catala, C., et al. 221, 273
- Simon, T., see Linsky, J.L., et al. 211, 173
- Sinachopoulos, D.: A photometric study of wide visual double stars with significant relative proper motion 226, 415 (81, 103)
- Sinachopoulos, D., see Geffert, M., et al. 224, 323
- Sinclair, A.T.: The orbits of the satellites of Mars determined from Earth-based and spacecraft observations 220, 321
- Sinclair, A.T., see Harper, D., et al. 221, 359
- Sivagnanam, P., Le Squeren, A.M., Foy, F., Tran Minh, F.: OH properties of Mira stars 211, 341
- Sivan, J.-P., see Perrin, J.-M. 219, 286
- Skillman, E.D., see Shostak, G.S. 214, 33
- Skoblikova, L.Ja., see Moskalenko, E.I., et al. 223, 141
- Slettebak, A., see Hauck, B. 214, 153
- Slezak, E., see Bouchet, P., et al. 224, 367 (80, 379)
- Smirnov, A.S., see Kaminker, A.D., et al. 220, 117
- Smith, A.G., see Webb, J.R. 220, 65
- Smith, A., see Brinkmann, W., et al. 221, 385
- Smith, D., see Adams, N.G., et al. 220, 269
- Smith, L.F., Maeder, A.: The bolometric corrections and the  $M/L$  relation for Wolf-Rayet stars 211, 71
- Smith, L.J., see St-Louis, N., et al. 226, 249
- Smith, L.J., see Willis, A.J., et al. 215, 410 (77, 269)
- Smyth, G., see Fegan, D.J., et al. 211, L1
- Snow, T.P., Seab, C.G.: A search for interstellar and circumstellar  $C_{60}$  213, 291
- Snow, T.P., see Waters, L.B.F.M., et al. 211, 208
- Sobouti, Y.: Liouville's equation. I. Symmetries and classification of modes 210, 18
- Sobouti, Y.: Liouville's equation. II. Eigenmodes of harmonic potentials 214, 83
- Sobouti, Y., Samimi, J.: Liouville's equation. III. Symmetries of the linearized equation 214, 92
- Sobouti, Y., see Nasiri, S. 217, 127
- Sofue Y., see Fürst, E., et al. 209, 361
- Soifer, B.T., see Sanders, D.B., et al. 213, L5
- Sokoloff, D., see Krashenninnikova (Baryshnikova), et al. 213, 19
- Sol, H., see Boisson, C., et al. 211, 275
- Solanes, J.M., see Jordana Rdz, J.J., et al. 209, 15
- Solanki, S.K.: The origin and the diagnostic capabilities of the Stokes  $V$  asymmetry observed in solar faculae and the network 224, 225
- Solanki, S.K., see Grossmann-Doerth, U., et al. 221, 338
- Solanki, S.K., see Mathys, G. 208, 189
- Solanki, S.K., see Zayer, I., et al. 211, 463
- Solf, J., see Miranda, L.F. 214, 353
- Solomonson, N., see Amaldi, E., et al. 216, 325
- Solomos, N., see Meaburn, J., et al. 225, 497
- Sood, R.K., see Greenhill, J.G., et al. 208, L1
- Sood, R.K., see Manchanda, R.K., et al. 211, 353
- Sopka, R.J., Olofsson, H., Johansson, L.E.B., Nguyen-Q-Rieu, Zuckerman, B.: Molecular emission lines from the envelopes of evolved stars 210, 78
- Soru-Escaut, I., see Mouradian, Z. 210, 410
- Soru-Escaut, I., see Mouradian, Z., et al. 224, 267
- Soru-Escaut, I., see Simnett, G.M., et al. 224, 284
- Soubeyran, A., Wlérick, G., Bijaoui, A., Lelièvre, G., Bouchet, P., Horville, D., Renard, L., Servan, B.: 3C 120: study of continuum-emitting condensations close to the nucleus 222, 27
- Soucaïl, G., see Hammer, F., et al. 208, L7
- Soutoul, A., see Ballet, J., et al. 211, 217
- Soutoul, A., see Webber, W.R. 215, 128
- Spangler, S., Fanti, R., Gregorini, L., Padrielli, L.: The role of refractive interstellar scintillation in the low frequency variability of extragalactic radio sources 209, 315
- Spence, G., see von der Lühe, O., et al. 224, 351
- Spencer, R.E., see Fanti, C., et al. 217, 44
- Spencer, R.E., see Salter, C.J., et al. 220, 42
- Spite, F., see Richtler, T., et al. 225, 351
- Spite, F., see Spite, M., et al. 222, 35



- Spite, F., Spite, M., François, P.: Chemical evolution of the Magellanic Clouds. I. Metal abundance in three young supergiants of the Small Cloud 210, 25
- Spite, M., Barbuy, B., Spite, F.: Chemical evolution of the Magellanic Clouds. III. Oxygen and carbon abundances in a few F supergiants of the Small Cloud 222, 35
- Spite, M., see Richtler, T., et al. 225, 351
- Spite, M., see Spite, F., et al. 210, 25
- Srivastava, R.K., see Iyengar, K.V.K., et al. 221, 250
- Stagni, R., see Margoni, R., et al. 226, 421 (81, 393)
- Stahl, O., see Baade, D. 209, 255
- Stahl, O., see Baade, D. 209, 268
- Stahl, O., see Jüttner, A., et al. 226, 415 (81, 93)
- Stahl, O., see Zickgraf, F.-J. 223, 165
- Stahl, O., see Zickgraf, F.-J., et al. 220, 206
- Stahl, O., Wilson, T.L., Henkel, C., Appenzeller, I.: The  $^{12}\text{CH}^+ / ^{13}\text{CH}^+$  ratio toward  $\zeta$  Ophiuchi 221, 321
- Stalio, R., see Bernabeu, G., et al. 226, 215
- Stammes, P., de Haan, J.F., Hovenier, J.W.: The polarized internal radiation field of a planetary atmosphere 225, 239
- Stanga, R., see Waters, L.B.F.M., et al. 211, 208
- Starchenko, S.V., Shukurov, A.M.: Observable parameters of spiral galaxies and galactic magnetic fields 214, 47
- Stasińska, G.: Snapshots of evolving model planetary nebulae 213, 274
- Stasińska, G., see Tylenda, R. 217, 209
- Stauber, R., see Greenhill, J.G., et al. 208, L1
- Staude, H.J., see Neckel, T., et al. 210, 378
- Steehan, F.W.M., see van Genderen, A.M., et al. 213, 161
- Steehan, F.W.M., see van Genderen, A.M., et al. 223, 376 (79, 263)
- Steffen, M., Ludwig, H.-G., Krüß, A.: A numerical simulation study of solar granular convection in cells of different horizontal dimension 213, 371
- Steinacker, J., Schlickeiser, R.: Stochastic acceleration of solar protons in the transrelativistic region 224, 259
- Steinberg, J.-L., see Lecacheux, A., et al. 217, 237
- Steiner, O., Pizzo, V.J.: A parametric survey of model solar fluxtubes 211, 447
- Stella, L., see Nannurelli, M. 226, 343
- Stella, L., see Parmar, A.N., et al. 222, 96
- Stellmacher, G., see Wiehr, E. 225, 528
- Stenflo, J.O.: Differential rotation of the Sun's magnetic field pattern 210, 403
- Stenflo, J.O., see Zayer, I., et al. 211, 463
- Stenholm, B., see Acker, A., et al. 217, 394 (77, 487)
- Stenholm, B., see Acker, A., et al. 224, 363 (80, 309)
- Stenholm, B., see Gleizes, F., et al. 222, 237
- Stenholm, B., see Lundström, I. 218, 199
- Stenholm, B., see Preite-Martinez, A., et al. 226, 421 (81, 309)
- Stenholm, B., see Tylenda, R., et al. 213, 520 (77, 39)
- Stephenson, F.R., Said, S.S.: Non-tidal changes in the Earth's rate of rotation as deduced from medieval eclipse observations 215, 181
- Stepień, K.: Excess calcium emission flux and the Rossby number 210, 273
- Stepień, K., Dominiczak, R.: Effective temperatures of Ap stars 219, 197
- Stepień, K., Ulmschneider, P.: X-ray emission from acoustically heated coronae 216, 139
- Stepień, K.: Radii and space orientation of the rotational axes of Ap stars 220, 105
- Steppe, H., see Salter, C.J., et al. 225, 167
- Steppe, H., see Sanders, D.B., et al. 213, L5
- Stevens, I.R., see St-Louis, N., et al. 226, 249
- Stevenson, T.R., see Amaldi, E., et al. 216, 325
- Stickel, M., Fried, J.W., Kühr, H.: Optical spectroscopy of 1 Jy BL Lacertae objects and flat spectrum radio sources 223, 383 (80, 103)
- Stickel, M., Fried, J.W., Kühr, H.: The gravitational lens hypothesis for 0846+51 W1 supported by new observations 224, L27
- Stickel, M., see Fürst, E., et al. 223, 66
- Stirpe, G.M., see Brand, J., et al. 211, 315
- Stirpe, G.M., van Groningen, E., de Bruyn, A.G.: Emission line variation in the Seyfert galaxy Fairall 9 and the presence of broad [O III] emission 211, 310
- Störzer, H., see Adam, J., et al. 218, 205
- Stone, R.G., see Reiner, M.J. 217, 251
- Storini, M., see Iucci, N., et al. 226, 421 (81, 367)
- Straižys, V., Goldberg, E.P., Meistas, E., Vansevičius, V.: Interstellar extinction in the area of the North America and Pelican Nebula complex 222, 82
- Strazzulla, G., see Baratta, G.A., et al. 219, 322
- Stutz, J., see Goebel, J., et al. 222, L5
- St-Louis, N., Smith, L.J., Stevens, I.R., Willis, A.J., Garmany, C.D., Conti, P.S.: IUE observations of variability in the WN6 star HD 192163 226, 249
- Sündermann, J., see Brosche, P., et al. 220, 318
- Sundelius, B., see Thomasson, M., et al. 211, 25
- Sundland, S.R., see Ambruster, C.W., et al. 208, 198
- Sundland, S.R., see Hawley, S.L., et al. 220, 218
- Surdej, J., see Hutsemekers, D. 219, 237
- Surma, P., see Bender, R., et al. 217, 35
- Suson, D., see Rindler, W. 218, 15
- Svatek, G.F., see Adelman, S.J., et al. 224, 365 (80, 285)
- Swanepoel, J.W.H., see De Jager, O.C., et al. 221, 180
- Swank, J., see Doyle, J.G., et al. 223, 219
- Sweet, P.A., see Almléaky, Y.M., et al. 224, 328
- Synnott, S.P., see Jacobson, R.A., et al. 225, 548
- Szabelska, B., see Giler, M., et al. 217, 311
- Szudy, J., see Bielski, A., et al. 208, 357
- Taber, R.C., see Amaldi, E., et al. 216, 325
- Tadini, M., see Bossi, M., et al. 222, 117
- Tafalla, M., see Bachiller, R., et al. 210, 366
- Tagliaferri, G., see Beuermann, K., et al. 219, L7
- Tagliaferri, G., see van der Woerd, H., et al. 220, 221
- Takahashi, Y., see Yoshino, T., et al. 224, 316
- Takalo, L.O., Sillanpää, A.: Long-term optical colour and spectral index variability of OJ 287 218, 45
- Takeda, Y.: Multiplets in multi-level non-LTE radiative transfer 211, 383
- Talavera, A., see Catala, C., et al. 221, 273
- Talavera, A., see Wamsteker, W., et al. 220, 341 (79, 1)
- Tan, J., see Penninx, W., et al. 208, 146
- Tan Lu, see Yongheng Zhao, et al. 223, 147
- Tang, G., Rönnäng, B., Bååth, L.: Radio source structure from geodetic VLBI observations: evolution of the quasar 3C 345 at 8 GHz 216, 31
- Tapia, M., Persi, P., Roth, M., Ferrari-Toniolo, M.: Three-micron spectroscopy of three highly reddened field stars 225, 488
- Tapia, M., see Melnick, J., et al. 213, 89
- Tapia, M., see Roth, M., et al. 222, 211
- Tarengi, M., see West, R.M. 223, 61

- Tassie, L.J., see Brosche, P. 219, 13
- Tassoul, J.-L., Tassoul, M.: The internal rotation of the Sun 213, 397
- Tassoul, M., see Tassoul, J.-L. 213, 397
- Taylor, A.R., see Waters, L.B.F.M., et al. 213, L19
- Taylor, A.R., see Waters, L.B.F.M., et al. 223, 207
- Taylor, D.B., see Harper, D., et al. 221, 359
- Taylor, R.C., see Birch, P.V. 226, 421 (81, 409)
- Taylor, W., see Goebel, J., et al. 222, L5
- te Lintel Hekkert, P., see Heske, A., et al. 218, L5
- te Lintel Hekkert, P., see Zijlstra, A.A., et al. 217, 157
- te Lintel Hekkert, P., Versteeg-Hensel, H.A., Habing, H.J., Wiertz, M.: A catalogue of stellar 1612 MHz maser sources 219, 364 (78, 399)
- Teerikorpi, P.: Galactic rotation curve in the range  $0.4 < R/R_0 < 1$  from neutral hydrogen 21 cm line profiles and the graphic variant of the Agekyan et al. method 209, 46
- Tenorio-Tagle, G., see Yorke, H.W., et al. 216, 207
- Terlevich, R., see Melnick, J., et al. 213, 89
- Terzan, A., see Geffert, M., et al. 209, 423
- Texier, P., see Chollet, F., et al. 226, 418 (81, 285)
- Thaddeus, P., see Nyman, L.-Å., et al. 216, 185
- Thé, P.S., de Winter, D., Arens, M., Heijblok, M., Nieuwland, E.R.: The spectral energy distribution of early-type stars. II. The extinction law towards O-type stars 226, 415 (81, 115)
- Thé, P.S., see Blondel, P.F.C., et al. 223, 383 (80, 115)
- Thé, P.S., see Catala, C., et al. 221, 273
- Thé, P.S., see Hu, J.Y., et al. 208, 213
- Thé, P.S., see Tjin A Djie, H.R.E., et al. 218, 338 (78, 1)
- Thévenin, F.: Oscillator strengths from the solar spectrum 213, 522 (77, 137)
- Thimm, G., see Hanuschik, R.W., et al. 220, 153
- Thomas, H.C., see Beuermann, K., et al. 219, L7
- Thomas, H.C., see van der Woerd, H., et al. 220, 221
- Thomas, J.A., see Greenhill, J.G., et al. 208, L1
- Thomas, J.M.: A numerical survey of relativistic rotating neutron star structures using the Hartle-Thorne formalism 223, 375 (79, 189)
- Thomas, N., Keller, H.U.: The colour of comet P/Halley's nucleus and dust 213, 487
- Thomas, N., see Keller, H.U. 226, L9
- Thomas, R.N., see Doazan, V., et al. 210, 249
- Thomasson, M., Donner, K.J., Sundelius, B., Byrd, G.G., Huang, T.-Y., Valtonen, M.J.: Formation of leading spiral arms in retrograde galaxy encounters 211, 25
- Thronson, H.A., Jr., Walker, C.K., Walker, C.E., Maloney, P.: Millimeter continuum observations of the active star-forming core of M82 214, 29
- Thuillot, W., see Arlot, J.E., et al. 213, 479
- Thum, C., see Altenhoff, W.J., et al. 222, 323
- Thum, C., see Martín-Pintado, J., et al. 215, L13
- Thum, C., see Martín-Pintado, J., et al. 222, L9
- Thum, C., see Mauersberger, R., et al. 223, 376 (79, 217)
- Thum, C., see Salter, C.J., et al. 225, 167
- Tijdhof, W., see van Genderen, A.M., et al. 223, 376 (79, 263)
- Tilanus, R.P.J., see Wakker, B.P., et al. 226, 57
- Tiphène, D., see Lacombe, F., et al. 215, 211
- Tjin A Djie, H.R.E., see Blondel, P.F.C., et al. 223, 383 (80, 115)
- Tjin A Djie, H.R.E., see Catala, C., et al. 221, 273
- Tjin A Djie, H.R.E., Thé, P.S., Andersen, J., Nordström, B., Finkenzeller, U., Jankovics, I.: The variable Herbig Ae star HR 5999. VIII. Spectroscopic observations 1975-1985 and correlations with simultaneous photometry 218, 338 (78, 1)
- Tomkin, J., Lambert, D.L., Edvardsson, B., Gustafsson, B., Nissen, P.E.: HR 107 - an F-type mild barium dwarf star 219, L15
- Toriseva, M., see Liljeström, T., et al. 220, 342 (79, 19)
- Tornambé, A., see Caputo, F., et al. 222, 121
- Torres, C., see Wroblewski, H. 218, 342 (78, 231)
- Tourrenc, P., see Boulanger, J.L., et al. 217, 375
- Tourrenc, P., see Boulanger, J.L., et al. 217, 381
- Toussaint, F., Reimers, D.: Variations in the chromospheric Ca II lines of  $\alpha$  Orionis 226, L17
- Tozzi, G.P., see Pasquini, L., et al. 218, 187
- Trams, N.R., see Waters, L.B.F.M., et al. 211, 208
- Trams, N.R., Waters, L.B.F.M., Waelkens, C., Lamers, H.J.G.L.M., van der Veen, W.E.C.J.: The effect of mass loss on the evolution of low-mass post-AGB stars 218, L1
- Tran Minh, F., see Sivagnanam, P., et al. 211, 341
- Trefzger, C.F., see Pel, J.W., et al. 217, 394 (77, 513)
- Treves, A., see Carlini, A. 215, 283
- Trottet, G., see Hulot, E., et al. 213, 383
- Trümper, J., see Schulz, N.S., et al. 225, 48
- Trullols, E., Rosselló, G., Jordi, C., Lahulla, F.: *uvby* photometry for 67 stars in the region of  $\alpha$  Persei 226, 415 (81, 47)
- Truong-Bach, Nguyen-Q-Rieu: Excitation of HCN hyperfine lines in circumstellar envelopes: redshift and molecular abundance 214, 267
- Tucholke, H.-J.: Positions of southern open cluster stars proposed for the HIPPARCOS mission 218, 341 (78, 187)
- Tucholke, H.-J., see Geffert, M., et al. 224, 323
- Tuffs, R., see Mezger, P.G., et al. 209, 337
- Tully, J.A., Le Dourneuf, M., Zeppen, C.J.: Photoionisation of the B<sup>+</sup>(<sup>1</sup>S<sup>o</sup>) ground state 211, 485
- Tully, J.A., see Burgess, A., et al. 217, 319
- Tunca, Z., see Aslan, Z., et al. 208, 385
- Tuominen, I., Rüdiger, G.: Solar differential rotation as a multiparameter turbulence problem 217, 217
- Tuominen, I., see Belyakina, T.S., et al. 223, 119
- Tuominen, I., see Brandenburg, A., et al. 213, 411
- Tuominen, I., see Huovelin, J., et al. 218, 340 (78, 129)
- Turatto, M., Cappellaro, E., Petrosian, A.R.: Supernovae in Markarian galaxies 217, 79
- Turatto, M., see Barbon, R., et al. 226, 421 (81, 421)
- Turatto, M., see Cappellaro, E., et al. 218, 241
- Turner, B., see Gerin, M., et al. 224, L24
- Tylenda, R., Acker, A., Gleizes, F., Stenholm, B.: Magnitudes of central stars of southern planetary nebulae 213, 520 (77, 39)
- Tylenda, R., see Acker, A., et al. 217, 394 (77, 487)
- Tylenda, R., Stasińska, G.: The evolution of planetary nebulae nuclei: models against observations 217, 209
- Ubertini, P., see Greenhill, J.G., et al. 208, L1
- Uitenbroek, H.: Operator perturbation method for multi-level line transfer with partial redistribution 213, 360
- Uitenbroek, H.: An efficient method for the evaluation of general redistribution integration weights 216, 310
- Ulmschneider, P.: The chromospheric emission from acoustically heated stellar atmospheres 222, 171

- Ulmschneider, P., see Stępień, K. 216, 139
- Ulrich, M.-H.: Intermediate resolution spectra of quasars with  $z > 2$  220, 71
- Unger, S.W., Pedlar, A., Hummel, E.: Cross-like radio structure in NGC 6500: Evidence for bipolar outflow? 208, 14
- Valentijn, E.A., see Peletier, R.F., et al. 217, 391 (77, 339)
- Vallée, J.P.: A physical analysis of S II and C II layers in four molecular cloud edges: NGC 3576, NGC 6334, S 87, and S 88 213, 295
- Vallée, J.P.: Magnetised molecular cloud edges 224, 191
- Vallée, J.P., Roger, R.S.: Radio surveys and source counts at 408 MHz and 1420 MHz towards the Abell 1314 cluster of galaxies 213, 520 (77, 31)
- Valluri, S.-R., see Papini, G. 208, 345
- Valtaoja, E., see Olah, K., et al. 218, 192
- Valtaoja, L., see Olah, K., et al. 218, 192
- Valtonen, M.J., see Thomasson, M., et al. 211, 25
- van Amerongen, S., see van Paradijs, J., et al. 223, 375 (79, 205)
- van Amerongen, S., van Paradijs, J.: Detection of a brief outburst from the intermediate polar V 1223 Sgr 219, 195
- van Breugel, W., see Fanti, C., et al. 217, 44
- van de Stadt, H., see Waters, L.B.F.M., et al. 213, L19
- van de Weygaert, R., Icke, V.: Fragmenting the universe. II. Voronoi vertices as Abell clusters 213, 1
- van den Heuvel, E.P.J., see Meurs, E.J.A. 226, 88
- van den Heuvel, E.P.J., see van Kerkwijk, M.H., et al. 209, 173
- van den Heuvel, E.P.J., see Waters, L.B.F.M., et al. 220, L1
- van den Oord, G.H.J., Kuijpers, J., White, N.E., van der Hulst, J.M., Culhane, J.L.: A combined radio and X-ray observation of Algol 209, 296
- van den Oord, G.H.J., Mewe, R.: The X-ray flare and the quiescent emission from Algol as detected by EXOSAT 213, 245
- van den Oord, G.H.J., see Doyle, J.G., et al. 208, 208
- van den Oord, G.H.J., see Doyle, J.G., et al. 224, 153
- van der Hucht, K.A., see van Genderen, A.M., et al. 224, 125
- van der Hulst, J.M., see Hummel, E. 226, 416 (81, 51)
- van der Hulst, J.M., see van den Oord, G.H.J., et al. 209, 296
- van der Klis, M., Bonnet-Bidaud, J.M.: The X-ray ephemeris of Cygnus X-3 214, 203
- van der Klis, M., see Bonnet-Bidaud, J.M., et al. 213, 97
- van der Klis, M., see Chevalier, C., et al. 210, 114
- van der Klis, M., see Hasinger, G. 225, 79
- van der Klis, M., see van Paradijs, J., et al. 225, L5
- van der Raay, H.B., see Isaak, G.R., et al. 208, 297
- van der Veen, W.E.C.J.: The mass-loss evolution of oxygen-rich AGB stars and its consequences for stellar evolution 210, 127
- van der Veen, W.E.C.J., Breukers, R.J.L.H.: Infrared bolometric corrections for AGB stars with circumstellar shells 213, 133
- van der Veen, W.E.C.J., Geballe, T.R., Habing, H.J., van Langevelde, H.J.: IRAS 17516-2525: an evolved star or a young stellar object? 216, L1
- van der Veen, W.E.C.J., Habing, H.J., Geballe, T.R.: Objects in transition from the AGB to the planetary nebula stage: new visual and infrared observations 226, 108
- van der Veen, W.E.C.J., Rutgers, M.: A comparison between CO-, OH-, and IR-mass-loss rates of evolved stars 226, 183
- van der Veen, W.E.C.J., see Trams, N.R., et al. 218, L1
- van der Wal, P., see Krügel, E., et al. 211, 419
- van der Wal, P., see Schmid-Burgk, J., et al. 215, 150
- van der Werf, P.P., Dewdney, P.E., Goss, W.M., Vanden Bout, P.A.: High resolution H I observations of dark clouds. II. L 1551 216, 215
- van der Werf, P.P., Goss, W.M.: High resolution H I observations of H II regions. I. Orion A 224, 209
- van der Woerd, H., see Siegel, N., et al. 225, 97
- van der Woerd, H., Tagliaferri, G., Thomas, H.C., Beuermann, K.: Variable X-ray emission from the dMe star EXO 040830-7134.7 220, 221
- van Driel, W., Balkowski, C., van Woerden, H.: Distribution and motions of atomic hydrogen in lenticular galaxies. VIII. The S0/a galaxies NGC 3619, 3626, and 3900 218, 49
- van Driel, W., see de Jager, C., et al. 211, 157
- van Driel, W., van Woerden, H.: Distribution and motions of atomic hydrogen in lenticular galaxies. IX. NGC 3941 and NGC 4694 225, 317
- van Geffen, J.H.G.M., Hoyng, P.: Turbulent transport of magnetic fields. IV. Damping of the mean field  $\langle B \rangle$  in  $\alpha^2$ -dynamoes with  $\alpha \propto \cos \theta$  213, 429
- van Genderen, A.M.: The maximum amplitude of the optical micro-variations of massive O-F type stars (or  $\alpha$  Cygni variables, including LBV's or SDor variables) across the HR diagram 208, 135
- van Genderen, A.M., Bovenschen, H., Engelsman, E.C., Goudfrooy, P., van Haarlem, M.P., Hartmann, D., Latour, H.J., Ng, Y.K., Prein, J.J., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M., Tjdhof, W.: Light variations of massive stars ( $\alpha$  Cygni variables). IX 223, 376 (79, 263)
- van Genderen, A.M., Breukers, R.J.L.H., Houtekamer, P., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M.: An investigation of the micro variations of highly luminous OBA-type stars ( $\alpha$  Cygni variables). VIII. A study of the periodicities in the radial velocity and light variations of the nitrogen-rich supergiant HD 105056 (ON 9.7 Iae) 213, 161
- van Genderen, A.M., Hadiyanto Nitihardjo, G.: The new long-period Cepheid G458 = HDE 270100 in the Large Magellanic Cloud 221, 230
- van Genderen, A.M., Hadiyanto Nitihardjo, G.: Light variations of massive stars ( $\alpha$  Cygni variables). X. The F type supergiants G266 = HDE 271182 = R92 and G322 = HDE 269612 in the LMC 223, 379 (79, 401)
- van Genderen, A.M., see de Jager, C., et al. 211, 157
- van Genderen, A.M., van der Hucht, K.A., Bakker, P.R.: Strömgren photometry of the variable Wolf-Rayet star HD 86161 = WR 16 224, 125
- van Gent, R.H.: Lightcurves of the Algol-variable U CrB in the UPS photometrical system 217, 393 (77, 471)
- van Gorkom, J.H., see Schwarz, U.J., et al. 215, 33
- van Groningen, E., de Bruyn, A.G.: Broad emission line profiles in Seyfert-1 galaxies: [O III]-wings from a transition zone 211, 293
- van Groningen, E., see Stirpe, G.M., et al. 211, 310
- van Groningen, E., van Weeren, N.: A search for electron-scattered wings in H  $\alpha$  in Seyfert-1 galaxies 211, 318

- van Haarlem, M.P., see van Genderen, A.M., et al. 223, 376 (79, 263)
- van Hoof, P.A.M., see Waters, L.B.F.M., et al. 211, 208
- van Hooff, J.P.C., see de Rooij, W.A., et al. 226, 347
- van Houten-Groeneveld, I., van Houten, C.J., Wisse-Schouten, M., Bardwell, C., Gehrels, T.: The 1977 Palomar-Leiden Trojan Survey 224, 299
- van Houten, C.J., see van Houten-Groeneveld, I., et al. 224, 299
- van Kerkwijk, M.H., see Waters, L.B.F.M. 223, 196
- van Kerkwijk, M.H., van Oijen, J.G.J., van den Heuvel, E.P.J.: Extended optical spectroscopy of the massive companion of 4U 1907+09 209, 173
- van Langevelde, H.J., see van der Veen, W.E.C.J., et al. 216, L1
- van Oijen, J.G.J.: Are massive X-ray binaries runaway stars? 217, 115
- van Oijen, J.G.J., see van Kerkwijk, M.H., et al. 209, 173
- van Paradijs, J., Isaacman, R.: An infrared search for obscured globular clusters associated with X-ray sources 222, 129
- van Paradijs, J., Kraakman, H., van Amerongen, S.: Five-colour optical photometry of AE Aquarii 223, 375 (79, 205)
- van Paradijs, J., see Chevalier, C., et al. 210, 114
- van Paradijs, J., see Heemskerk, M.H.M. 223, 154
- van Paradijs, J., see Penninx, W., et al. 208, 146
- van Paradijs, J., see van Amerongen, S. 219, 195
- van Paradijs, J., van der Klis, M., Pedersen, H.: The orbital period of the cataclysmic variable WX Ceti 225, L5
- van Roermund, F.H.P.M., see van Genderen, A.M., et al. 213, 161
- van Roermund, F.H.P.M., see van Genderen, A.M., et al. 223, 376 (79, 263)
- van 't Veer-Menneret, C., Faraggiana, R., Gerbaldi, M., Castelli, F., Burkhart, C., Floquet, M.: Behaviour of the O1 triplet at  $\lambda$  7773. III. Am stars 224, 171
- van 't Veer, F., Maceroni, C.: The angular momentum loss for late-type stars 220, 128
- van Weeren, N., see van Groningen, E. 211, 318
- Van Winkler, K., see Adelman, S.J., et al. 224, 365 (80, 285)
- van Woerden, H., see Becker, R., et al. 214, 402
- van Woerden, H., see van Driel, W. 225, 317
- van Woerden, H., see van Driel, W., et al. 218, 49
- Vanbeveren, D.: Evolution of massive binaries including the effect of convective core overshooting 224, 93
- Vanden Bout, P.A., see van der Werf, P.P., et al. 216, 215
- Vanderriest, C., Schneider, J., Herpe, G., Chevreton, M., Moles, M., Wlérick, G.: The value of the time delay  $\Delta T(A, B)$  for the "double" quasar 0957+561 from optical photometric monitoring 215, 1
- Vanševičius, V., see Straizys, V., et al. 222, 82
- van't Veer-Menneret, C., see Gerbaldi, M., et al. 226, 415 (81, 127)
- Vanysek, V., see Boehnhardt, H., et al. 220, 286
- Vardya, M.S.: IRAS Low Resolution Spectrograph spectral class and M and S Miras 209, 165
- Varvoglis, P.P., see Mavridis, L.N., et al. 224, 365 (80, 279)
- Vauclair, G., Goupil, M.J., Baglin, A., Auvergne, M., Chevreton, M.: Subharmonics in the variable white dwarf G 191-16 215, L17
- Vaz, L.P.R., see Clausen, J.V., et al. 215, 410 (77, 257)
- Vázquez, R.A., see Feinstein, A. 215, 411 (77, 321)
- Vechevalov, V.V., see Chirikov, B.V. 221, 146
- Veillet, C., see Oberti, P., et al. 224, 365 (80, 289)
- Ventura, J., see Maile, T., et al. 223, 251
- Ventura, J., see Mastichiadis, A., et al. 208, L11
- Venturi, T., Feretti, L., Giovannini, G.: Evidence for gas around two radio galaxies at the Coma cluster periphery 213, 49
- Venturi, T., see Dallacasa, D., et al. 223, 379 (79, 391)
- Venturi, T., see Fanti, C., et al. 217, 44
- Verma, R.P., see Iyengar, K.V.K., et al. 221, 250
- Véron, P., see Zhou Xu, et al. 211, L12
- Véron-Cetty, M.-P., see Zhou Xu, et al. 211, L12
- Verschueren, W., David, M.: The effect of gas removal on the dynamical evolution of young stellar clusters 219, 105
- Verstege-Hensel, H.A., see te Lintel Hekkert, P., et al. 219, 364 (78, 399)
- Verter, F., Rickard, L.J.: Optical depth of molecular gas in starburst galaxies: Is M 82 the prototype? 225, 27
- Vettolani, G., Cappi, A., Chincarini, G., Focardi, P., Garilli, B., Gregorini, L., Maccagni, D.: Radial velocities of 13 southern rich clusters 220, 344 (79, 147)
- Vettolani, G., see Cappi, A., et al. 223, 1
- Vettolani, G., see Fairall, A.P., et al. 218, 343 (78, 269)
- Vettolani, G., see Gregorini, L., et al. 224, 363 (80, 239)
- Viala, Y.P., see Bel, N., et al. 208, 331
- Vidal-Madjar, A., see Ben Jaffel, L. 220, 306
- Vidal-Madjar, A., see Beust, H., et al. 223, 304
- Vidal-Madjar, A., see Lagrange-Henri, A.M., et al. 215, L5
- Vidal-Madjar, A., see McConnell, J.C., et al. 225, L9
- Viegas-Aldrovandi, S.M., Contini, M.: Composite models for the narrow emission-line region of active galactic nuclei. VI. The Fe lines 215, 253
- Vilas Boas, J.W.S., see de Jager, C., et al. 211, 157
- Vilchez, J.M., Mampaso, A., Riera, A., Phillips, J.P.: The nature of the cometary nebula 1548 C 27 213, 303
- Vilchez, J.M., see Mampaso, A., et al. 220, 235
- Vilchez, J.M., see Riera, A., et al. 210, 351
- Vilhu, O., Ambruster, C.W., Neff, J.E., Linsky, J.L., Brandenburg, A., Ilyin, I.V., Shakhovskaya, N.I.: IUE observations of the M dwarfs CM Draconis and Rossiter 137B: magnetic activity at saturated levels 222, 179
- Vilhu, O., Neff, J.E., Rahunen, T.: Rotational modulation of hydrogen Lyman  $\alpha$  flux from 44 Bootis 208, 201
- Villoresi, G., see Lucci, N., et al. 226, 421 (81, 367)
- Vilmer, N., see Hulot, E., et al. 213, 383
- Viotti, R., Baratta, G.B.: Erratum: FeII References Catalogues (Ser. 77, No. 1, 155) 217, 394 (77, 155)
- Virtanen, H., see Huovelin, J., et al. 218, 340 (78, 129)
- Vittone, A.A., see Milano, L., et al. 210, 181
- Vivekanand, M., Morris, D., Downes, D.: Strategies for 2-dimensional telescope motion in optical interferometry 213, 516
- Vladilo, G., see Centurion, M. 218, 243
- Vladilo, G., see Foing, B.H., et al. 224, 362 (80, 189)
- Vladilo, G., see Rebolo, R., et al. 224, 362 (80, 135)
- Völk, H.J.: The correlation between radio and far-infrared emission for disk galaxies: a calorimeter theory 218, 67
- Völk, H.J., Klein, U., Wielebinski, R.: M 82, the Galaxy, and the dependence of cosmic ray energy production on the supernova rate 213, L12
- Völk, H.J., see Drury, L.O'C., et al. 225, 179



- Vogel, M., see Islikier, H., et al. 219, 271  
 Vogel, M., see Nussbaumer, H. 213, 137  
 Vogel, M., see Nussbaumer, H., et al. 211, L27  
 Voglis, N., Hiotelis, N.: Simulations of galaxy formation in tidal fields 218, 1  
 Vogt, N., see Barrera, L.H. 220, 99  
 Volk, K., see Goebel, J., et al. 222, L5  
 von Ballmoos, P., Diehl, R., Schönfelder, V.: Imaging the gamma-ray sky with Compton telescopes 221, 396  
 von der Lühse, O., see Pehlemann, E. 216, 337  
 von der Lühse, O., Widener, A.L., Rimmel, Th., Spence, G., Dunn, R.B., Wiborg, P.: Solar feature correlation tracker for ground-based telescopes 224, 351  
 von Steiger, R., Geiss, J.: Supply of fractionated gases to the corona 225, 222  
 von Uexküll, M., Kneer, F., Malherbe, J.M., Mein, P.: Oscillations of the Sun's chromosphere. V. Importance of network dynamics for chromospheric heating 208, 290  
 Vreux, J.M., Dennefeld, M., Andriat, Y., Rochowicz, K.: Near infrared spectra of galactic and Magellanic Wolf-Rayet stars 226, 421 (81, 353)  
 Vyas, M.L., Abhyankar, K.D.: Photometric analysis of the eclipsing binary RX Hydrae 226, 415 (81, 67)  
 Vyas, M.L., Abhyankar, K.D.: Photometric study of the eclipsing binary RR Leporis 226, 415 (81, 81)  
 Wade, R., see Geballe, T.R., et al. 208, 255  
 Waelkens, C., Heynderickx, D.: HD 112481 and HD 145794, two  $\beta$  Cephei stars 208, 129  
 Waelkens, C., see Babel, J., et al. 216, 125  
 Waelkens, C., see de Jager, C., et al. 211, 157  
 Waelkens, C., see Trams, N.R., et al. 218, L1  
 Waelkens, C., see Waters, L.B.F.M., et al. 211, 208  
 Wagner, S.J., Appenzeller, I.: An off-centre NLR with exceptionally broad lines 225, L13  
 Wagner, S.J., Dettmar, R.-J., Bender, R.: Stellar kinematics of bulge, disk and nucleus in NGC 4594 215, 243  
 Wagner, S.J., see Appenzeller, I. 225, 432  
 Waha, L., see Boehnhardt, H., et al. 220, 286  
 Wakker, B.P., Broeils, A.H., Tilanus, R.P.J., Sancisi, R.: A search for high-velocity H I in nearby face-on spiral galaxies 226, 57  
 Walborn, N.R., Prévot, M.-L., Prévot, L., Wamsteker, W., González, R., Gilmozzi, R., Fitzpatrick, E.L.: The spectrograms of Sanduleak -69°202, precursor to Supernova 1987A in the Large Magellanic Cloud 219, 229  
 Waldron, L., see Greenhill, J.G., et al. 208, L1  
 Waldron, L., see Manchanda, R.K., et al. 211, 353  
 Walke, D.G., Mamon, G.A.: The frequency of chance alignments of galaxies in loose groups 225, 291  
 Walker, C.E., see Thronson, H.A., Jr., et al. 214, 29  
 Walker, C.K., see Thronson, H.A., Jr., et al. 214, 29  
 Walker, H., see Goebel, J., et al. 222, L5  
 Walker, H.J., see Deul, E.R. 226, 418 (81, 207)  
 Walmsley, C.M., see Cox, P., et al. 209, 382  
 Walmsley, C.M., see Martín-Pintado, J., et al. 215, L13  
 Walmsley, C.M., see Menten, K.M., et al. 223, 258  
 Walmsley, C.M., see Wouterloot, J.G.A., et al. 215, 131  
 Walsh, J.R., see Meaburn, J. 223, 277  
 Walter, F.M., see Neff, J.E., et al. 215, 79  
 Walter, G., see Beer, H., et al. 211, 245  
 Walter, H.G.: A compilation catalogue of positions of extragalactic radio sources 210, 455  
 Walter, H.G.: A celestial reference frame based on extragalactic radio sources 223, 376 (79, 283)  
 Walter, H.G., see Geffert, M., et al. 224, 323  
 Walter, R., Maeder, A.: The synthesis of  $^{26}\text{Al}$  in massive stars 218, 123  
 Wambsganss, J., Schneider, P., Quirrenbach, A., Witzel, A.: Numerical simulations of scattering in the interstellar medium applied to rapid radio variability in the quasar 0917+624 224, L9  
 Wampler, E.J., Richichi, A.: Observations of nebular emission lines towards SN 1987 A 217, 31  
 Wamsteker, W., Driessen, C., Munoz, J.R., Hassall, B.J.M., Pasian, F., Barylak, M., Russo, G., Egret, D., Murray, J., Talavera, A., Heck, A.: IUE-ULDA/USSP: the on-line resolution spectral data archive of the International Ultraviolet Explorer 220, 341 (79, 1)  
 Wamsteker, W., see Reimers, D., et al. 218, 71  
 Wamsteker, W., see Walborn, N.R., et al. 219, 229  
 Wang Rui, see Hu Hui, et al. 224, 321  
 Wannier, P., see Gulkis, S., et al. 213, 465  
 Warren Jr., W.H., see Adelman, S.J., et al. 224, 365 (80, 285)  
 Warren, Jr., W.H., see Adelman, S.J., et al. 226, 418 (81, 221)  
 Waters, L.B.F.M., Boland, W., Taylor, A.R., van de Stadt, H., Lamers, H.J.G.L.M.: Millimeter observations of the Be stars  $\psi$  Persei and  $\gamma$  Cassiopeiae 213, L19  
 Waters, L.B.F.M., de Martino, D., Habets, G.M.H.J., Taylor, A.R.: X-ray light curves of Be/X-ray binaries 223, 207  
 Waters, L.B.F.M., Lamers, H.J.G.L.M., Snow, T.P., Mathlener, E., Trams, N.R., van Hoof, P.A.M., Waelkens, C., Seab, C.G., Stanga, R.: Circumstellar dust around HR 4049: a critical test for theories of interstellar dust 211, 208  
 Waters, L.B.F.M., Pols, O.R., Hogeveen, S.J., Coté, J., van den Heuvel, E.P.J.: The formation and detectability of Be + white dwarf systems 220, L1  
 Waters, L.B.F.M., see Trams, N.R., et al. 218, L1  
 Waters, L.B.F.M., van Kerkwijk, M.H.: The relation between orbital and spin periods in massive X-ray binaries 223, 196  
 Wattenbach, R., see Krügel, E., et al. 211, 419  
 Wattenbach, R., see Schmid-Burgk, J., et al. 215, 150  
 Wdowczyk, J., see Giler, M., et al. 217, 311  
 Webb, J.K., see Rhee, G.F.R.N., et al. 217, 1  
 Webb, J.R., Smith, A.G.: The 1987 outburst of the BL Lacertid AO0235+164 220, 65  
 Webber, W.R., Soutoul, A.: The  $^{13}\text{C}/^{12}\text{C}$  ratio in cosmic ray sources 215, 128  
 Weekes, T.C., see Fegan, D.J., et al. 211, L1  
 Wegner, G., see Byrne, P.B., et al. 214, 227  
 Wehlau, W.H., see Rice, J.B., et al. 208, 179  
 Wehrse, R., see Hauschildt, P.H., et al. 210, 262  
 Wehrse, R., see Hauschildt, P.H., et al. 213, 522 (77, 115)  
 Weidemann, V.: Distances and mass distribution of central stars of planetary nebulae 213, 155  
 Weidemann, V., Koester, D.: The presence of carbon in DZ star atmospheres 210, 311  
 Weidemann, V., see Koester, D. 219, 276  
 Weinberger, R.: A catalogue of expansion velocities of galactic planetary nebulae 218, 343 (78, 301)  
 Weinberger, R., see Kimeswenger, S. 209, 51

- Weiss, A.: Investigation of a criterion for the evolution to red giants **209**, 135
- Weiss, A., see Kayser, R., et al. **214**, 4
- Weiss, W.W., Schneider, H.: Pulsating CP2 stars. II.  $\gamma$  Equulei (HD 201601) and  $\beta$  Coronae Borealis (HD 137909) **224**, 101
- Weiss, W.W., see Breger, M., et al. **215**, 48
- Weiss, W.W., see Schneider, H. **210**, 147
- Wen, Z., Deng, Z.-G., Liu, Y.-Z., Xia, X.-Y.: The fractal dimension in the large-scale distribution of galaxies with different luminosities **219**, 1
- Wendker, H.J., see Wisotzki, L. **221**, 311
- Wenzel, W., see Hudec, R., et al. **225**, 411
- Werner, K.: Non-LTE model atmosphere calculations with approximate lambda operators: application of tridiagonal operators **226**, 265
- Wesselius, P.R., see Laureijs, R.J., et al. **220**, 226
- Wesselius, P.R., see Zhang, C.Y., et al. **218**, 231
- Wessolowski, U., see Schmutz, W., et al. **210**, 236
- Westerlund, B.E., Garnier, R.: *UBV* $\beta$  photometry of luminous early-type stars and emission-line stars in the Southern Coalsack region **218**, 341 (**78**, 203)
- Westerlund, B.E., Krelowski, J.: The division of diffuse interstellar bands into families **218**, 216
- West, R.M., Jørgensen, H.E.: Post-perihelion observations of comet P/Halley at  $r = 8.5$  AU **218**, 307
- West, R.M., see Alania, I.F., et al. **215**, 411 (**77**, 333)
- West, R.M., see Kristensen, L.K. **218**, 317
- West, R.M., Tarengi, M.: The optical counterpart of the strong southern radio source PKS 1343-601 (13S6A) **223**, 61
- Whaling, W., see Biémont, E., et al. **209**, 391
- Whitehead, M.J., see Meaburn, J., et al. **208**, 17
- White, G.J., see Fridlund, C.V.M. **223**, L13
- White, G.J., see Richardson, K.J., et al. **221**, 95
- White, N.E., see van den Oord, G.H.J., et al. **209**, 296
- White, R.E., see Adelman, S.J., et al. **226**, 418 (**81**, 221)
- White, S.M., Kundu, M.R., Jackson, P.D.: Simple non-thermal models for the quiescent radio emission of dMe flare stars **225**, 112
- White, S.M., see Jackson, P.D., et al. **210**, 284
- Whyborn, N.D., see Booth, R.S., et al. **216**, 315
- Wiborg, P., see von der Lühé, O., et al. **224**, 351
- Widener, A.L., see von der Lühé, O., et al. **224**, 351
- Wiehr, E., Balthasar, H.: The decrease of penumbral velocity and magnetic field at the outer sunspot boundary **208**, 303
- Wiehr, E., Stellmacher, G.: Velocity and magnetic field fluctuations in penumbral fine-structures **225**, 528
- Wielebinski, R., see Beck, R., et al. **222**, 58
- Wielebinski, R., see Harnett, J.I., et al. **216**, 39
- Wielebinski, R., see Klein, U., et al. **211**, 280
- Wielebinski, R., see Lesch, H., et al. **217**, 99
- Wielebinski, R., see Seiradakis, J.H., et al. **226**, 421 (**81**, 291)
- Wielebinski, R., see Völk, H.J., et al. **213**, L12
- Wiertz, M., see te Lintel Hekkert, P., et al. **219**, 364 (**78**, 399)
- Wijers, R.A.M.J.: The new binary millisecond pulsar PSR 0021-72A: a laboratory for gravitational physics **209**, L1
- Wiklund, T.: Abundant molecular gas in the starburst galaxy IRAS 0833+652 **219**, L11
- Wiklund, T., Henkel, C.: The molecular cloud content of early type galaxies. I. Detections and global properties **225**, 1
- Wildermann, E., see Brosche, P., et al. **211**, 239
- Willems, F.J., see Onaka, T., et al. **218**, 169
- Willems, F.J., see Onaka, T., et al. **226**, 418 (**81**, 261)
- Williams, I.P., see Lagerkvist, C.-I., et al. **219**, 366 (**78**, 519)
- Willis, A.J., Howarth, I.D., Smith, L.J., Garmany, C.D., Conti, P.S.: Ultraviolet P-Cygni profile variations in HD 50896 **215**, 410 (**77**, 269)
- Willis, A.J., see St-Louis, N., et al. **226**, 249
- Wills, B.J., see Breger, M., et al. **215**, 48
- Wilson, T.L., Johnston, K.J., Henkel, C., Menten, K.M.: The distribution of hot thermal methanol in Orion-KL **214**, 321
- Wilson, T.L., see Mauersberger, R., et al. **226**, L5
- Wilson, T.L., see Sanders, D.B., et al. **213**, L5
- Wilson, T.L., see Stahl, O., et al. **221**, 321
- Wink, J.E., see Mezger, P.G., et al. **209**, 337
- Wink, J.E., see Salter, C.J., et al. **220**, 42
- Winkler, H., Wolf, B.: An analysis of high resolution spectra of the B[e]-stars CPD-52°9243 and MWC 300 **219**, 151
- Winnberg, A., see Rohlfs, R., et al. **211**, 402
- Winnewisser, G., see Armstrong, J.T. **210**, 373
- Winters, R.R., see Macklin, R.L., et al. **216**, 109
- Wisotzki, L., Wendker, H.J.: Is HS 240 an interstellar bubble? **221**, 311
- Wisse-Schouten, M., see van Houten-Groeneveld, I., et al. **224**, 299
- Witt, H.J., see Kayser, R. **221**, 1
- Witzel, A., see Marcaide, J.M., et al. **211**, L23
- Witzel, A., see Quirrenbach, A., et al. **226**, L1
- Witzel, A., see Wambsgans, J., et al. **224**, L9
- Wlérick, G., see Soubeyran, A., et al. **222**, 27
- Wlérick, G., see Vanderriest, C., et al. **215**, 1
- Wlodek, S., see Herbst, E., et al. **222**, 205
- Woan, G., Duffett-Smith, P.J.: Terrestrial transmitters as phase calibrators in disconnected interferometry **208**, 381
- Wöhl, H., Balthasar, H.: The solar rotation 1883 until 1893 as inferred from the Greenwich photoheliographic results and observations published by G. Spörer **219**, 313
- Wöhl, H., see Lustig, G. **218**, 299
- Wöhl, H., see Münzer, H., et al. **213**, 431
- Wolf, B.: Empirical amplitude-luminosity relation of S Doradus variables and extragalactic distances **217**, 87
- Wolf, B., see Jüttner, A., et al. **226**, 415 (**81**, 93)
- Wolf, B., see Winkler, H. **219**, 151
- Wolf, B., see Zickgraf, F.-J., et al. **220**, 206
- Wolf, K., see Kraus, U., et al. **223**, 246
- Wolf, K., see Maile, T., et al. **223**, 251
- Wolf, K., see Rebetzky, A., et al. **225**, 137
- Wolfendale, A.W., see Giler, M., et al. **217**, 311
- Wolff, E., see Siegel, N., et al. **225**, 97
- Woltjer, L., see Setti, G. **224**, L21
- Wood, P.R., see Bessell, M.S., et al. **213**, 209
- Wood, P.R., see Bessell, M.S., et al. **213**, 520 (**77**, 1)
- Wootten, A., see Gerin, M., et al. **224**, L24
- Wouterloot, J.G.A., Brand, J.: IRAS sources beyond the solar circle. I. CO observations **224**, 362 (**80**, 149)
- Wouterloot, J.G.A., Henkel, C., Walmsley, C.M.: CO observations of IRAS sources in Orion and Cepheus **215**, 131
- Wouterloot, J.G.A., see Brand, J., et al. **211**, 315
- Wouterloot, J.G.A., see Kömpe, C., et al. **221**, 295

- Wroblewski, H., Torres, C.: New proper-motion stars south of declination  $-40^\circ$  and right ascension between 00 h and 04 h 30 m **218**, 342 (78, 231)
- Wu, J.X., see Xie, G.Z., et al. **220**, 89
- Wu Guangjie, see Mao Wei, et al. **215**, 190
- Wu Xuejun, see Xu Chongming, et al. **220**, 30
- Wünsch, J., see Brosche, P., et al. **220**, 318
- Xiangping Wu: The statistical properties of gravitational lenses of galaxies and quasars **214**, 43
- Xiao-qing Li: Turbulent scattering of high-frequency radiation in accretion discs **225**, 555
- Xia, X.-Y., see Börner, G., et al. **209**, 1
- Xia, X.-Y., see Wen, Z., et al. **219**, 1
- Xie, G.Z., Lu, J.F., Wu, J.X., Lu, R.W., Hao, P.J.: Determination of several parameters of BL Lacertae objects and relativistic beaming **220**, 89
- Xingfen Zhu, see Yaoquan Chu **215**, 14
- Xingfen Zhu, see Yaoquan Chu **222**, 1
- Xu, B.-X., see Amaldi, E., et al. **216**, 325
- Xu, B.-X., see Huang, T.-Y., et al. **220**, 329
- Xu, C., De Zotti, G.: A model for the far-IR emission of non-Seyfert Markarian galaxies **225**, 12
- Xu Chongming, Fabbri, R., Wu Xuejun: The gravitational lens effect of the Virgo Supercluster **220**, 30
- Xu Shui, see Mao Wei, et al. **215**, 190
- Yamamoto, S., see Mikami, H., et al. **217**, L5
- Yaoquan Chu, see Börner, G., et al. **219**, 29
- Yaoquan Chu, see Hongguang Bi, et al. **218**, 19
- Yaoquan Chu, Xingfen Zhu: No quasar clustering at  $z > 2$  **215**, 14
- Yaoquan Chu, Xingfen Zhu: The periodicity in the redshift distribution of the Lyman-alpha forest **222**, 1
- Yates, M.G., see Meisenheimer, K., et al. **219**, 63
- Yilmaz, N., see Hack, M., et al. **225**, 143
- Yokoyama, K., see Yoshino, T., et al. **224**, 316
- Yongheng Zhao, Tan Lu, Keliang Huang, Jianlong Lu, Qiuhe Peng: Gamma-ray emission from pulsars **223**, 147
- Yorke, H.W., see Różycka, M., et al. **208**, 69
- Yorke, H.W., Tenorio-Tagle, G., Bodenheimer, P., Różycka, M.: The combined role of ionization and supernova explosions in the destruction of molecular clouds **216**, 207
- Yoshii, Y., Arimoto, N.: Erratum: Spheroidal systems as a one-parameter family of mass at their birth **224**, 361
- Yoshii, Y., see Arimoto, N. **224**, 361
- Yoshikawa, M.: A survey of the motions of asteroids in the commensurabilities with Jupiter **213**, 436
- Yoshino, T., Takahashi, Y., Kawaguchi, N., Heki, K., Yokoyama, K., Manabe, S.: Intercomparison of the Earth rotation parameters determined by two independent VLBI networks **224**, 316
- Young, J.W., see Di Martino, M., et al. **223**, 352
- Younis, S.M., see Schlickeiser, R., et al. **216**, 197
- Youssef, N.H., Amer, M.A.: Solar photospheric abundance of scandium and vanadium deduced from their ions **220**, 281
- Youssef, N.H., Khalil, N.M.: An improved solar lead abundance **208**, 271
- Youssef, N.H., Khalil, N.M.: Photospheric abundance of samarium deduced from two new ionic lines **215**, 165
- Youyuan Zhou, see Börner, G., et al. **221**, 191
- Yuan, J.W.: White dwarf luminosity functions calculated from models of galactic evolution and the age of the galactic disk **224**, 108
- Yuen K.Ng., see de Jager, C., et al. **211**, 157
- Yussef-Zadeh, F., see Seiradakis, J.H., et al. **226**, 421 (81, 291)
- Zahn, J.-P.: Tidal evolution of close binary stars. I. Revisiting the theory of the equilibrium tide **220**, 112
- Zahn, J.-P., Bouchet, L.: Tidal evolution of close binary stars. II. Orbital circularization of late-type binaries **223**, 112
- Zamorano, J., see Rego, M., et al. **223**, 380 (79, 443)
- Zaninetti, L.: Three dimensional motion of astrophysical jets **221**, 204
- Zaninetti, L.: Simulations of the flux contours of astrophysical jets **223**, 369
- Zaninetti, L.: Dynamical Voronoi tessellation. I. The two-dimensional case **224**, 345
- Zank, G.P.: Solution topologies for cosmic ray modified galactic winds. I. Spherical symmetry **225**, 37
- Zappalà, R.A., Zuccarello, F.: Energy storage in solar loops by footpoint motions **214**, 369
- Zappalà, V., see Cellino, A., et al. **219**, 320
- Zappalà, V., see Di Martino, M., et al. **223**, 352
- Zappalà, V., see Farinella, P., et al. **217**, 298
- Zasov, A.V., see Afanasiev, V.L., et al. **213**, L9
- Zayer, I., Solanki, S.K., Stenflo, J.O.: The internal magnetic field distribution and the diameters of solar magnetic elements **211**, 463
- Zdunik, J.L., see Haensel, P., et al. **217**, 137
- Zdunik, J.L., see Haensel, P., et al. **222**, 353
- Zeigler, K., see Di Martino, M., et al. **223**, 352
- Zeppen, C.J., see Becker, S.R., et al. **221**, 375
- Zeppen, C.J., see Butler, K. **208**, 337
- Zeppen, C.J., see Tully, J.A., et al. **211**, 485
- Zensus, A., see Sanders, D.B., et al. **213**, L5
- Zhang, C.Y., Laureijs, R.J., Chlewicki, G., Clark, F.O., Wesselius, P.R.: Dust ring around  $\lambda$  Orionis **218**, 231
- Zhang, H., see Huang, T.-Y., et al. **220**, 329
- Zhou Xu, Véron-Cetty, M.-P., Véron, P.: The near-infrared NaI doublet in giant elliptical galaxies **211**, L12
- Zhukov, V.I.: Resonant absorption of magnetogravity waves in an isothermal atmosphere permeated by a nearly horizontal magnetic field in the presence of radiative exchange **222**, 293
- Zhu, J., see Huang, T.-Y., et al. **220**, 329
- Zickgraf, F.-J., Schulte-Ladbeck, R.E.: Polarization characteristics of galactic B[e] stars **214**, 274
- Zickgraf, F.-J., see Chavarría-K., C., et al. **215**, 51
- Zickgraf, F.-J., Stahl, O.: The peculiar B[e] star MWC 623: a binary system with a Li-rich K star **223**, 165
- Zickgraf, F.-J., Wolf, B., Stahl, O., Humphreys, R.M.: S18: a new B[e] supergiant in the Small Magellanic Cloud with evidence for an excretion disk **220**, 206
- Zijlstra, A.A., Pottasch, S.R.: Low mass planetary nebulae near the galactic centre **216**, 245
- Zijlstra, A.A., Pottasch, S.R., Bignell, C.: A catalogue of VLA radio continuum observations of planetary nebulae with the Very Large Array **223**, 378 (79, 329)
- Zijlstra, A.A., te Lintel Hekkert, P., Pottasch, S.R., Caswell, J.L., Ratag, M., Habing, H.J.: OH maser emission from young planetary nebulae **217**, 157
- Zimmermann, H.-U., see Ögelmann, H. **214**, 179
- Zimmermann, P., see Gulkis, S., et al. **213**, 465

- Zodi, A.M., see de Jager, C., et al. 211, 157
- Zorec, J., Höflich, P., Divan, L.: Phase variations of 88 Herculis: Do the UV observations confirm a connection between these variations and the changes of the photospheric parameters of the underlying star? 210, 279
- Zuccarello, F., see Zappalà, R.A. 214, 369
- Zuckerman, B., Dyck, H.M.: Outflow velocities from carbon stars 209, 119
- Zuckerman, B., Maddalena, R.J.: Carbon stars with oxygen-rich circumstellar envelopes? 223, L20
- Zuckerman, B., see Sopka, R.J., et al. 210, 78
- Zuiderwijk, E., see Lindgren, H., et al. 218, 111
- Zwaan, C., see Habets, G.M.H.J. 211, 56
- Zwaan, C., see Rutten, R.G.M., et al. 219, 239
- Zylka, R., see Mezger, P.G., et al. 209, 337
- Zylka, R., see Salter, C.J., et al. 220, 42
- Zylka, R., see Sanders, D.B., et al. 213, L5



# Thesaurus of key words used in the annual subject indexes (revised November 1989, valid from January 1990 until further notice)

**N.B.** The key words listed under the code numbers 07.11.1, 09.11.1, 09.16.1, 09.22.1, 16.03.1, 16.07.1, 16.14.1, 17.02.1, 19.42.1 and 19.93.1 are intended for use with specific astronomical objects; each contains the word "individual". The corresponding code numbers should never be used alone, but always in combination with the most common names for the astronomical objects in question. For example, if a paper discusses three individual galaxies, these should be coded on the title page of the manuscript in the following manner:

07.11.1 Arp 220; 07.11.1 M 51; 07.11.1 NGC 4472

Note that *each object* (in the example the three galaxies) counts as *one* Thesaurus code. No more than *six* codes all together should be listed as this is the limit fixed by the computer program.

Absolute magnitudes; *see Stars: luminosities of*  
Abundances; *see under the different objects*

- 01.01.1 Acceleration mechanisms
- 01.01.2 Accretion, accretion disks
- 01.02.1 Analytical methods
  - Associations; *see Clusters: open, and associations*
- 01.03.1 Asteroids
- 01.04.1 Astrometry
- 01.05.1 Astronomical constants
- 01.06.1 Atlases
- 01.07.1 Atomic and molecular data
- 01.08.1 Atomic and molecular processes; *see also Chemical reactions*
- 01.08.2 Background radiations
  - Binary stars; *see Stars: binaries*
- 02.01.1 BL Lacertae objects
- 02.02.1 Black holes
- 03.01.1 Catalogues and dictionaries
- 03.02.1 Celestial mechanics
- 03.03.1 Chemical reactions
- 03.04.1 Clusters: of galaxies
- 03.05.1 Clusters: globular
- 03.06.1 Clusters: open, and associations
  - Collisions, atomic and molecular; *see Atomic and molecular data*
- 03.07.1 Comets
- 03.08.1 Convection
- 03.10.1 Cosmic rays; *see also Sun (the): cosmic rays*
- 03.11.1 Cosmogony
- 03.12.1 Cosmology
- 03.12.2 Dark matter
- 04.01.1 Data analysis; *see also Image processing*
- 04.02.1 Dense matter
- 04.03.1 Distances, distance scale
  - Double stars; *see Stars: binaries*
  - Dust; *see Interstellar medium: dust; Interplanetary medium*
- 05.01.1 Earth: atmosphere
- 05.02.1 Earth: general
- 05.02.2 Earth: rotation

- 05.03.1 Eclipses
- 05.04.1 Editorials
- 05.06.1 Elementary particles
- 05.07.1 Ephemerides
- 05.08.1 Errata
- 06.01.1 Fundamental stars and other objects
- 07.01.1 Galaxies: active; *see also Galaxies, Seyfert; Galaxies: nuclei of; Quasars*
- 07.02.1 Galaxies: barred
  - Galaxies: clusters of, *see Clusters: of galaxies*
- 07.03.1 Galaxies: compact
- 07.05.1 Galaxies: dwarf elliptical
- 07.06.1 Galaxies: elliptical
- 07.07.1 Galaxies: evolution of
- 07.08.1 Galaxies: formation of
- 07.09.1 Galaxies: general
- 07.10.1 Galaxies: haloes of
- 07.11.1 Galaxies: individual; *see also Galaxies: Magellanic Clouds*
- 07.12.1 Galaxies: irregular
- 07.13.1 Galaxies: jets of
- 07.14.1 Galaxies: kinematics and dynamics of
- 07.15.1 Galaxies: lenticular
- 07.16.1 Galaxies: Magellanic Clouds
- 07.17.1 Galaxies: radio
- 07.18.1 Galaxies: nuclei of
- 07.19.1 Galaxies: redshifts of
- 07.20.1 Galaxies: Seyfert
- 07.21.1 Galaxies: spiral
- 07.22.1 Galaxies: stellar content of
- 07.23.1 Galaxies: structure of
- 07.24.1 Galaxy (the): bulge of
- 07.25.1 Galaxy (the): center of
- 07.27.1 Galaxy (the): disk of
- 07.28.1 Galaxy (the): evolution of
- 07.29.1 Galaxy (the): general
- 07.30.1 Galaxy (the): halo of
- 07.31.1 Galaxy (the): kinematics and dynamics of
- 07.32.1 Galaxy (the): solar neighbourhood
- 07.33.1 Galaxy (the): stellar content of
- 07.34.1 Galaxy (the): structure of
- 07.35.1 Gamma rays: bursts
- 07.36.1 Gamma rays: general
  - Gas dynamics; *see Hydrodynamics and hydromagnetics*
  - Grains; *see Interstellar medium: dust; Interplanetary medium*
- 07.37.1 Gravitation
- 07.37.2 Herbig-Haro objects
- 08.01.1 Hydrodynamics
- 08.02.1 Hydromagnetics
  - HII regions; *see Interstellar medium: HII regions*
- 09.01.1 Image processing
- 09.02.1 Infrared radiation
- 09.03.1 Instruments; *see also Interferometry; Radio telescopes; Space vehicles*

- 09.04.1 Interferometry  
 09.05.1 Intergalactic medium  
 09.06.1 Interplanetary medium  
 09.07.1 Interstellar medium: abundances  
 09.08.1 Interstellar medium: bubbles  
 09.09.1 Interstellar medium: clouds: general  
 09.10.1 Interstellar medium: clouds: high velocity  
 09.11.1 Interstellar medium: clouds: individual  
 09.12.1 Interstellar medium: dust  
 09.13.1 Interstellar medium: extinction  
 09.14.1 Interstellar medium: general  
 09.15.1 Interstellar medium: HII regions: general  
 09.16.1 Interstellar medium: HII regions: individual  
 09.17.1 Interstellar medium: kinematics and dynamics of  
 09.18.1 Interstellar medium: magnetic field  
 09.19.1 Interstellar medium: molecules  
     Interstellar medium: planetary nebulae; *see Planetary nebulae*  
 09.20.1 Interstellar medium: radiation field  
 09.21.1 Interstellar medium: reflection nebulae: general  
 09.22.1 Interstellar medium: reflection nebulae: individual  
     Interstellar medium: shells; *see Interstellar medium: bubbles*  
     Interstellar medium: supernova remnants;  
     *see Supernovae and supernova remnants*  
 12.01.1 Lines: formation; *see also: Radiation transfer*  
 12.02.1 Lines: identification  
 12.03.1 Lines: profile  
 12.04.1 Luminosity function, mass function  
     Magellanic Clouds: *see Galaxies: Magellanic Clouds*  
 13.01.1 Magnetic field  
     Magnetohydrodynamics; *see Hydromagnetics, plasmas*  
 13.02.1 Masers  
     Mass function; *see Luminosity function, mass function*  
 13.03.1 Meteors, meteorites  
     Microwave background; *see Cosmic background radiation*  
     Molecules; *see Atomic and molecular data; Interstellar medium: molecules; Radio lines: molecular*  
     Nebulae; *see Interstellar medium: HII regions; Planetary nebulae; Interstellar medium: reflection nebulae; Supernovae and supernova remnants*  
     Neutrinos; *see Elementary particles*  
 14.01.1 Nuclear reactions  
 14.02.1 Nucleosynthesis  
 14.03.1 Numerical methods  
 15.01.1 Observational methods  
 15.02.1 Occultations  
     Parallaxes; *see Distances, distance scale*  
     Particle acceleration; *see Acceleration mechanisms*  
 16.01.1 Photometry  
 16.02.1 Planetary nebulae: general  
 16.03.1 Planetary nebulae: individual  
 16.04.1 Planets and satellites: abundances  
 16.05.1 Planets and satellites: atmospheres of  
 16.06.1 Planets and satellites: general  
 16.07.1 Planets and satellites: individual  
 16.08.1 Planets and satellites: magnetospheres of  
 16.09.1 Planets and satellites: Moon  
 16.09.2 Planets and satellites: rings  
 16.10.1 Planets and satellites: satellites  
 16.11.1 Plasmas  
 16.12.1 Polarization  
     Positions; *see Astrometry; Fundamental stars and other objects*  
     Proper motions; *see Astrometry; Fundamental stars and other objects*  
     Protostars; *see Stars: pre-main-sequence; Interstellar medium: clouds; Interstellar medium: kinematics and dynamics of*  
 16.13.1 Pulsars: general  
 16.14.1 Pulsars: individual  
 17.01.1 Quasars: general  
 17.02.1 Quasars: individual  
 17.03.1 Quasars: jets of  
 17.04.1 Quasars: redshifts of  
 18.01.1 Radar astronomy  
 18.02.1 Radial velocities; *see also Galaxy (the): kinematics and dynamics of; Galaxies: redshifts of; Quasars: redshift of*  
 18.03.1 Radiation mechanisms: general  
 18.03.2 Radiation mechanisms: synchrotron radiation  
 18.04.1 Radiation transfer; *see also Lines, formation*  
     Radio galaxies; *see Galaxies, radio*  
 18.05.1 Radio lines: molecular  
 18.06.1 Radio lines: recombination  
 18.07.1 Radio lines: 21-cm  
 18.08.1 Radio sources: general; *see also individual objects*  
 18.08.2 Radio continuum  
 18.09.1 Radio telescopes  
 18.09.2 Reference systems  
 18.10.1 Relativity  
 19.01.1 Satellites; *see Planets and satellites*  
 19.02.1 Scintillation  
 19.03.1 Seeing  
 19.04.1 Shock waves  
 19.05.1 Site testing  
     Solar neighbourhood; *see Galaxy (the): solar neighbourhood*  
 19.06.1 Solar system: general  
     Solar wind; *see Interplanetary medium*  
 19.07.1 Space vehicles and instruments  
 19.08.1 Spectrophotometry  
 19.09.1 Spectroscopy  
     Spiral structure; *see Galaxy (the): kinematics and dynamics of; Galaxy (the): structure of; Galaxies: kinematics and dynamics of; Galaxies: spiral; Galaxies: structure of*  
 19.10.1 Stars: abundances  
 19.11.1 Stars: activity of  
 19.12.1 Stars: atmospheres of  
 19.13.1 Stars: Be  
 19.14.1 Stars:  $\beta$  Cep  
 19.15.1 Stars: binaries: close  
 19.16.1 Stars: binaries: general  
 19.17.1 Stars: binaries: spectroscopic  
 19.18.1 Stars: binaries: symbiotic  
 19.19.1 Stars: binaries: visual  
 19.20.1 Stars: blue stragglers  
 19.21.1 Stars: bolometric correction

- 19.22.1 Stars: carbon
  - Stars: cataclysmic variables; *see Stars: novae*
- 19.23.1 Stars: Cepheids
- 19.24.1 Stars: chromospheres of
- 19.25.1 Stars: circumstellar matter
- 19.25.2 Stars: chemical peculiar
- 19.26.1 Stars: classification
- 19.27.1 Stars: collapsed
- 19.28.1 Stars: colors of
- 19.29.1 Stars: coronae of
- 19.30.1 Stars: diameters of
- 19.31.1 Stars:  $\delta$  Sct
- 19.31.2 Stars: dynamics
- 19.31.3 Stars: dwarfs
- 19.32.1 Stars: early-type
- 19.33.1 Stars: emission-line
- 19.34.1 Stars: evolution of
- 19.35.1 Stars: faint blue
- 19.36.1 Stars: flare
- 19.37.1 Stars: formation of
- 19.38.1 Stars: general
- 19.39.1 Stars: giant
- 19.40.1 Stars: helium
- 19.41.1 Stars: Hertzsprung-Russell diagram
- 19.42.1 Stars: individual
  - Stars: interior; *see Stars: structure of*
- 19.43.1 Stars: late-type
- 19.44.1 Stars: long-period variables
- 19.45.1 Stars: luminosities of
- 19.46.1 Stars: magnetic field
- 19.47.1 Stars: mass of
- 19.48.1 Stars: mass loss
- 19.49.1 Stars: mass-luminosity relation
  - Stars: Mira; *see Stars: long-period variables*
- 19.50.1 Stars: neutron
- 19.51.1 Stars: novae and cataclysmic variables
- 19.52.1 Stars: OH/IR
- 19.53.1 Stars: oscillations of
- 19.55.1 Stars: Population I
- 19.56.1 Stars: Population II
- 19.57.1 Stars: Population III
- 19.58.1 Stars: pre-main-sequence
- 19.59.1 Stars: radio radiation of
- 19.60.1 Stars: rotation of
- 19.61.1 Stars: RR Lyr
- 19.62.1 Stars: runaway
- 19.63.1 Stars: structure of
- 19.64.1 Stars: subdwarf
- 19.65.1 Stars: supergiant
  - Stars: supernovae; *see Supernovae and supernova remnants*
- 19.66.1 Stars: temperatures of
  - Stars: T Tau; *see Stars: pre-main-sequence*
- 19.67.1 Stars: variable
- 19.68.1 Stars: white dwarf
  - Stars: winds; *see Stars: mass loss*
- 19.69.1 Stars: Wolf-Rayet
  - Submillimetre radiation; *see Infrared radiation*
- 19.70.1 Sun (the): abundances
- 19.71.1 Sun (the): activity of
- 19.72.1 Sun (the): atmosphere of
- 19.73.1 Sun (the): bursts
- 19.74.1 Sun (the): chromosphere of
- 19.75.1 Sun (the): corona of
- 19.76.1 Sun (the): cosmic rays
- 19.77.1 Sun (the): faculae
- 19.78.1 Sun (the): flares
- 19.79.1 Sun (the): general
- 19.80.1 Sun (the): granulation
  - Sun (the): interior; *see Sun (the): structure of*
- 19.81.1 Sun (the): magnetic fields
- 19.82.1 Sun (the): oscillations of
- 19.83.1 Sun (the): photosphere of
- 19.84.1 Sun (the): prominences
- 19.85.1 Sun (the): radio radiation of
- 19.86.1 Sun (the): rotation of
- 19.87.1 Sun (the): solar-terrestrial relations;
  - see also Interplanetary medium*
- 19.88.1 Sun (the): solar wind; *see also Interplanetary medium*
- 19.89.1 Sun (the): structure of
- 19.90.1 Sun (the): sunspots
- 19.91.1 Sun (the): X-rays
- 19.92.1 Supernovae and supernova remnants: general
- 19.93.1 Supernovae and supernova remnants: individual
- 19.94.1 Surveys
  - Synchrotron radiation; *see Radiation mechanisms*
- 19.95.1 Time
  - Transition probabilities; *see Atomic and molecular data*
- 20.01.1 Turbulence
- 20.01.2 Universe (the): structure of
- 21.01.1 UV radiation; *see also under the different objects*
- 24.01.1 X-rays: binaries
- 24.02.1 X-rays: bursts
- 24.03.1 X-rays: general
- 24.04.1 X-rays: spectroscopy

## Annual Subject Index

**Astronomy and Astrophysics, Volumes 208-226 (1989)**  
**Supplement Series, Volumes 77-81 (1989)**

Volume and page numbers of articles published in the Supplement Series are printed in italics

The cross references for the key words are stored in the computer. Therefore they are always printed, even if in the respective year no paper belonging to a particular cross reference is published.

**Absolute magnitudes;** see Stars: luminosities of

**Abundances;** see under the different objects

### Acceleration mechanisms

M82, the Galaxy, and the dependence of cosmic ray energy production on the supernova rate

*Völk, H.J., Klein, U., Wielebinski, R.* **213**, L12

Neutrons from active galactic nuclei

*Kirk, J.G., Mastichiadis, A.* **213**, 75

Time-resolved spectroscopy of the eclipsing dwarf nova OY Carinae

*Hessman, F.V., Koester, D., Schoembs, R., Barwig, H.* **213**, 167

Synchrotron emission spectra from shockwaves in active galactic nuclei: an energy and space dependent diffusion coefficient

*Fritz, K.D.* **214**, 14

Implications of the solar flare  $\gamma$ -ray limb-brightening observations for particle acceleration and the flare magnetic environment. I. Approximate, analytical treatment

*MacKinnon, A.L., Brown, J.C.* **215**, 371

Photon surfing near compact accreting objects

*Icke, V.* **216**, 294

Wave propagation in dusty cool stellar envelopes

*Havnes, O., Hartquist, T.W., Pilipp, W.* **217**, L13

Distributed processes as contributors to the acceleration of cosmic rays

*Giler, M., Osborne, J.L., Ptuskin, V.S., Szabelska, B., Wdowczyk, J., Wolfendale, A.W.* **217**, 311

Particle acceleration at modified shock fronts. I. The power-law spectrum for relativistic flows

*Schneider, P., Kirk, J.G.* **217**, 344

Implications for the detection of ultra-high-energy gamma rays from Sco X-1

*Mitra, A.K.* **219**, L1

The origin of flat radio spectra in shell-type supernova remnants

*Schlickeiser, R., Fürst, E.* **219**, 192

Photomeson production in active galactic nuclei

*Mannheim, K., Biermann, P.L.* **221**, 211

The probability of detecting absorption features in gamma-ray burst spectra

*Melia, F.* **223**, L9

Stochastic acceleration of solar protons in the transrelativistic region

*Steinacker, J., Schlickeiser, R.* **224**, 259

Two patterns of correlated X-ray timing and spectral behaviour in low-mass X-ray binaries

*Hasinger, G., van der Klis, M.* **225**, 79

Collective plasma processes in extragalactic radio sources

*Lesch, H., Appl, S., Camenzind, M.* **225**, 341

Particle acceleration at modified shock fronts. II. The problem of injection

*Kirk, J.G., Schneider, P.* **225**, 559

### Accretion, accretion disks

Resumed spin-up in GX 1+4

*Greenhill, J.G., Giles, A.B., Sharma, D.P., Dieters, S., Sood, R.K., Thomas, J.A., Waldron, L., Manchanda, R.K., Carli, R., Hammer, P., Kendziorra, E., Staubert, R., Bazzano, A., Ubertini, P., La Padula, C.* **208**, L1

Radiation hydrodynamics of the boundary layer in accretion disks. I. Numerical methods

*Kley, W.* **208**, 98

The evolution of the Eddington ratio for active galactic nuclei

*Padovani, P.* **209**, 27

"Mixed" mass transfer- and disk-instability models for dwarf nova eruptions

*Duschl, W.J., Livio, M.* **209**, 183

Cygnus X-3 at high energies: a critical analysis of observational results

*Chardin, G., Gerbier, G.* **210**, 52

Optical studies of transient low-mass X-ray binaries in quiescence. I. Centaurus X-4: orbital period, light curve, spectrum and models for the system

*Chevalier, C., Ilovaisky, S.A., van Paradijs, J., Pedersen, H., van der Klis, M.* **210**, 114

Stability of accretion in low mass X-ray binaries

*Schwarzenberg-Czerny, A.* **210**, 174

Spots on T Tauri stars

*Bouvier, J., Bertout, C.* **211**, 99

Long- and short-term variability of the T Tauri Star RY Lupi

*Gahn, G.F., Fischerström, C., Liseau, R., Lindroos, K.P.* **211**, 115

LMC X-2: an extragalactic bulge-type source

*Bonnet-Bidaud, J.M., Motch, C., Beuermann, K., Pakull, M.W., Parmar, A.N., van der Klis, M.* **213**, 97

Evolution of close binary systems that undergo a dynamically stable late case C mass transfer

*Pastetter, L., Ritter, H.* **214**, 186

Recycled radiopulsar reservation in the  $P$ - $\dot{P}$  diagram

*Kolosov, D.E., Lipunov, V.M., Postnov, K.A., Prokhorov, M.E.* **215**, L21

A model for a non-Keplerian magnetic accretion disk with a magnetically heated corona

*Heyvaerts, J.F., Priest, E.R.* **216**, 230

Life and death of cosmions in stars

*Bouquet, A., Salati, P.* **217**, 270

Equilibrium configuration of an inertially dragged viscous fluid around a slowly rotating compact object

*Prasanna, A.R.* **217**, 329

The luminous quasar HS 1700+6416 and the shape of the "big bump" below 500 Å

*Reimers, D., Clavel, J., Groote, D., Engels, D., Hagen, H.J., Naylor, T., Wamsteker, W., Hopp, U.* **218**, 71

Numerical simulation of acoustic instabilities in thin accretion disks

*Kaisig, M.* **218**, 89

Numerical simulation of the formation of shock waves in thin accretion disks and the resulting angular momentum transport

*Kaisig, M.* **218**, 102

H $\alpha$  versus X-ray luminosity in dwarf M stars

*Doyle, J.G.* **218**, 195



- Theoretical aspects of two  $\alpha$ -distributions in accretion disks  
*Adam, J., Störzer, H., Duschl, W.J.* **218**, 205
- Erratum: Spots on T Tauri stars  
*Bouvier, J., Bertout, C.* **218**, 337
- Active galactic nuclei as accreting turbulent synchrotron-self-Compton sources  
*Atoyan, A.M., Nahapetian, A.* **219**, 53
- The H $\alpha$  profile of Algol  
*Gillet, D., Mouchet, M., North, P.* **219**, 219
- Cyclotron spectrum from a dipole magnetic field accretion column  
*Canalle, J.B.G., Opher, R.* **219**, 334
- The 1987 outburst of the BL Lacertid AO 0235+164  
*Webb, J.R., Smith, A.G.* **220**, 65
- Can we expect a freely precessing neutron star in Her X-1?  
*Bisnovatyi-Kogan, G.S., Mersov, G.A., Sheffer, E.K.* **221**, L7
- Constraints from the UV delay in dwarf nova outbursts  
*Meyer, F., Meyer-Hofmeister, E.* **221**, 36
- X-ray absorption dips in low-mass X-ray binaries: an evidence for tidal feed back?  
*Pandey, U.S.* **221**, 62
- Inhomogeneous wind accretion: comparison between 3D and 2D computations  
*Sawada, K., Matsuda, T., Anzer, U., Börner, G., Livio, M.* **221**, 263
- Radiation hydrodynamics of the boundary layer in accretion disks. II. Optically thick models  
*Kley, W.* **222**, 141
- Analysis of the optical light curve of the massive X-ray binary LMC X-4  
*Heemskerk, M.H.M., van Paradijs, J.* **223**, 154
- Towards a self-consistent description of accretion columns. III. Radiation pattern and computer-generated pictures of the emission region  
*Kraus, U., Herold, H., Maile, T., Nollert, H.-P., Rebetzky, A., Ruder, H., Wolf, K.* **223**, 246
- Five-colour optical photometry of AE Aquarii  
*van Paradijs, J., Kraakman, H., van Amerongen, S.* **223**, 375; **79**, 205
- The orbital period of the cataclysmic variable WX Ceti  
*van Paradijs, J., van der Klis, M., Pedersen, H.* **225**, L5
- Accretion disk models with a self-consistent viscosity parameter  $\alpha$  in convective zones  
*Duschl, W.J.* **225**, 105
- Towards a self-consistent description of accretion columns. II. Frequency-dependent radiation hydrodynamics  
*Rebetzky, A., Bock, U., Herold, H., Kraus, U., Maile, T., Nollert, H.-P., Ruder, H., Wolf, K.* **225**, 137
- Turbulent scattering of high-frequency radiation in accretion discs  
*Xiao-qing Li* **225**, 555
- Soft and hard X-ray variability from the accretion disk of NGC 5548  
*Kaastra, J.S., Barr, P.* **226**, 59
- The X-ray spectrum of modified  $\alpha$ -viscosity accretion disks  
*Nannurelli, M., Stella, L.* **226**, 343
- Analytical methods**
- Intrinsic versus observed properties in near large spherical structures  
*Jordana Rdz, J.J., Salvador-Solé, E., Solanes, J.M.* **209**, 15
- Asymptotic analysis of resonance polarization and escape probability approximations  
*Faurobert-Scholl, M., Frisch, H.* **219**, 338
- The  $\beta$  Pictoris circumstellar disk. IX. Theoretical results on the infall velocities of Ca II, Al III, and Mg II  
*Beust, H., Lagrange-Henri, A.M., Vidal-Madjar, A., Ferlet, R.* **223**, 304
- The influence of periodic external conditions on birth rates of O/B stars  
*Nepveu, M.* **224**, 86
- A method for predicting a strong earthquake by means of astrometric observations  
*Hu Hui, Kan Rongju, Wang Rui, Cai Xin, Chen Cuixian* **224**, 321
- Deprojection of anisotropic emission in transparent systems  
*Kaastra, J.S.* **224**, 338
- The frequency of chance alignments of galaxies in loose groups  
*Walke, D.G., Mamon, G.A.* **225**, 291
- Associations**; see Clusters: open, and associations
- Asteroids**
- Modelling asteroid brightness variations. I. Numerical methods  
*Karttunen, H.* **208**, 314
- Modelling asteroid brightness variations. II. The uninterpretability of light curves and phase curves  
*Karttunen, H., Bowell, E.* **208**, 320
- A survey of the motions of asteroids in the commensurabilities with Jupiter  
*Yoshikawa, M.* **213**, 436
- Rotational variations in the optical polarization of 4 Vesta  
*Brogia, P., Manara, A.* **214**, 389
- The ages of asteroid families  
*Farinella, P., Carpino, M., Froeschlé, Ch., Froeschlé, Cl., Gonczi, R., Knežević, Z., Zappalà, V.* **217**, 298
- On the lost minor planet (719) Albert  
*Kristensen, L.K., West, R.M.* **218**, 317
- Vesta's shape, density and albedo features  
*Cellino, A., Di Martino, M., Drummond, J., Farinella, P., Paolicchi, P., Zappalà, V.* **219**, 320
- Physical studies of asteroids. XIX. Phase relations and composite lightcurves obtained with the Carlsberg Meridian Circle  
*Lagerkvist, C.-I., Magnusson, P., Williams, I.P., Buontempo, M.E., Gibbs, P., Morrison, L.V.* **219**, 366; **78**, 519
- The puzzling case of asteroid 8 Flora solved  
*Di Martino, M., Zappalà, V., Cellino, A., Barucci, M.A., Harris, A.W., Young, J.W., Zeigler, K.* **223**, 352
- The 1977 Palomar-Leiden Trojan Survey  
*van Houten-Groeneveld, I., van Houten, C.J., Wisse-Schouten, M., Bardwell, C., Gehrels, T.* **224**, 299
- Geminid meteoroids traced to cometary activity on Phaethon  
*Gustafson, B.A.S.* **225**, 533
- The very-high-eccentricity asymmetric expansion of the disturbing function near resonances of any order  
*Ferraz-Mello, S., Sato, M.* **225**, 541
- Lightcurves and pole position of asteroid 3 Juno  
*Birch, P.V., Taylor, R.C.* **226**, 421; **81**, 409
- Astrometry**
- Accurate position for the globular cluster X-ray source M15: AC211/X2127+119  
*Geffert, M., Aurière, M., Ilovaisky, S.A., Terzan, A.* **209**, 423

- A compilation catalogue of positions of extragalactic radio sources  
*Walter, H.G.* **210**, 455
- Astrometric plate reductions with orthogonal functions  
*Brosche, P., Wildermann, E., Geffert, M.* **211**, 239
- An analysis of the observations of the mutual events of the Galilean satellites of Jupiter made in 1985 at the Observatoire de Haute Provence  
*Arlot, J.E., Thuillot, W., D'Ambrosio, V.* **213**, 479
- The third astrolabe catalogue at Valinhos  
*Clauzet, L.B.F.* **213**, 521; **77**, 67
- Astrolabe observations of Uranus at Santiago  
*Noël, F.* **213**, 521; **77**, 73
- Observations of the Sun at the CERGA Astrolabe in 1986  
*Laclaire, F., Journet, A.* **213**, 522; **77**, 131
- A catalogue of ground-based astrometric observations of the Martian satellites, 1877–1982  
*Morley, T.A.* **215**, 409; **77**, 209
- Phobos and Deimos astrometric observations from Mariner 9  
*Duxbury, T.C., Callahan, J.D.* **216**, 284
- A catalogue of right ascensions and declinations of FK4 stars  
*Sadžakov, S., Dačić, M.* **217**, 392; **77**, 411
- On the lost minor planet (719) Albert  
*Kristensen, L.K., West, R.M.* **218**, 317
- The transformation of coordinates between the systems of B1950.0 and J2000.0, and the principal galactic axes referred to J2000.0  
*Murray, C.A.* **218**, 325
- Optical positions of radiostars. I  
*Costa, E., Loyola, P.* **218**, 340; **78**, 141
- Positions of southern open cluster stars proposed for the HIP-PARCOS mission  
*Tucholke, H.-J.* **218**, 341; **78**, 187
- New proper-motion stars south of declination  $-40^\circ$  and right ascension between 00 h and 04 h 30 m  
*Wroblewski, H., Torres, C.* **218**, 342; **78**, 231
- A celestial reference frame based on extragalactic radio sources  
*Walter, H.G.* **223**, 376; **79**, 283
- Optical positions of 21 radio sources in the Brorfelde system  
*Geffert, M., Tucholke, H.-J., Walter, H.G., Moreno, M.A., Ivanova, V., Sinachopoulos, D.* **224**, 323
- Lagrangian satellites of Tethys and Dione. I. Reduction of observations  
*Oberti, P., Veillet, C., Catullo, V.* **224**, 365; **80**, 289
- Orbits of six visual double stars  
*Couteau, P.* **224**, 367; **80**, 373
- The orbits of the satellites of Mars from spacecraft and Earth-based observations  
*Jacobson, R.A., Synnott, S.P., Campbell, J.K.* **225**, 548
- Results of observations made in Paris with the astrolabe in 1988  
*Chollet, F., Baudu, J.P., Débarbat, S., Golbasi, O., Lam, S.K., Texier, P.* **226**, 418; **81**, 285
- Orbital elements of eight interferometric binary stars  
*Baize, P.* **226**, 421; **81**, 415
- Atlases**
- An atlas of calculated continuum energy distributions for supernovae of type II  
*Hauschildt, P.H., Shaviv, G., Wehrse, R.* **213**, 522; **77**, 115
- A Bayesian classification of the IRAS LRS Atlas  
*Goebel, J., Volk, K., Walker, H., Gerbault, F., Cheeseman, P., Self, M., Stutz, J., Taylor, W.* **222**, L5
- The IUE spectral atlas of two normal B stars:  $\pi$  Ceti and  $\nu$  Capricorni (125–198 nm)  
*Artru, M.-C., Borsenberger, J., Lanz, T.* **223**, 381; **80**, 17
- Atomic and molecular data**
- Revision of the absolute scale of the Oxford Ti I oscillator strengths and the solar titanium abundance  
*Grevesse, N., Blackwell, D.E., Petford, A.D.* **208**, 157
- State selective excitation of O III by charge transfer of O IV with H  
*Gargaud, M., McCarroll, R., Opradolce, L.* **208**, 251
- Accurate solar photospheric abundances: a comparison with meteorite data  
*Booth, A.J.* **208**, 287
- Effective collision strengths for fine-structure forbidden transitions in the  $3p^3$  configuration of Cl III  
*Butler, K., Zeippen, C.J.* **208**, 337
- Power-law dependence of the pressure broadening of spectral lines on temperature  
*Bielski, A., Bobkowski, R., Szudy, J.* **208**, 357
- Lifetimes and transition probabilities in V II and the solar abundance of vanadium  
*Biémont, E., Grevesse, N., Faires, L.M., Marsden, G., Lawler, J.E., Whaling, W.* **209**, 391
- Photoionisation of the  $B^+(^1S)$  ground state  
*Tully, J.A., Le Dourneuf, M., Zeippen, C.J.* **211**, 485
- Proton transfer reactions of  $H_3^+$  with molecular neutrals at 30 K  
*Marquette, J.B., Rebiron, C., Rowe, B.R.* **213**, L29
- Photo-thermo-dissociation. I. A general mechanism for destroying molecules  
*Léger, A., Boissel, P., Désert, F.X., d'Hendecourt, L.* **213**, 351
- Oscillator strengths from the solar spectrum  
*Thévenin, F.* **213**, 522; **77**, 137
- Revision and extension to low temperature of numerical estimates of the electron collisional rates for atomic hydrogen  
*Giovanardi, C., Palla, F.* **215**, 409; **77**, 157
- Laboratory microwave spectroscopy of the  $C_3N$  radical in the vibrationally excited state  $v_3$   
*Mikami, H., Yamamoto, S., Saito, S., Guélin, M.* **217**, L5
- Estimates of Stark width along a homologous sequence  
*Dimitrijević, M.S., Popović, M.M.* **217**, 201
- Molecular band polarization in comet P/Halley  
*Sen, A.K., Joshi, U.C., Deshpande, M.R.* **217**, 307
- Coronal  $Mg^{+9}$ : collisional excitation of the  $2s-2p$  multiplet  
*Burgess, A., Mason, H.E., Tully, J.A.* **217**, 319
- Analytical expressions for the Rosseland-mean opacity and electron scattering in stellar atmospheres  
*Burger, P., Lamers, H.J.G.L.M.* **218**, 161
- Oscillator strength measurements in the vacuum-ultraviolet. IV. Weak lines of neutral carbon  
*Goldbach, C., Martin, M., Nollez, G.* **221**, 155
- Improved M1 and E2 transition probabilities for forbidden lines in ions of the nitrogen isoelectronic sequence  
*Becker, S.R., Butler, K., Zeippen, C.J.* **221**, 375
- Lifetimes in Sm II and the solar abundance of samarium  
*Biémont, E., Grevesse, N., Hannaford, P., Lowe, R.M.* **222**, 307
- Inferences concerning water vapour viscosity and mean free path at low temperatures  
*Crifo, J.F.* **223**, 365
- Wavelengths, oscillator strengths and transition probabilities of the  $H_2$  molecule for Lyman and Werner systems  
*Abgrall, H., Roueff, E.* **223**, 378; **79**, 313

- Oscillator strengths and damping constants from the solar spectrum at  $\lambda\lambda$  830–870 nm  
*Erdelyi-Mendes, M., Barbuy, B.* **224**, 363; **80**, 229
- A multiplet table for Mn I  
*Adelman, S.J., Svatek, G.F., Van Winkler, K., Warren Jr., W.H.* **224**, 365; **80**, 285
- Atomic partition functions for manganese I–III and cobalt I–III  
*Halenka, J.* **226**, 421; **81**, 303
- Atomic and molecular processes;** see also Chemical reactions
- State selective excitation of O III by charge transfer of O IV with H  
*Gargaud, M., McCarroll, R., Opradolce, L.* **208**, 251
- Effective collision strengths for fine-structure forbidden transitions in the  $3p^3$  configuration of Cl III  
*Butler, K., Zeppen, C.J.* **208**, 337
- Raman scattering as a diagnostic possibility in astrophysics  
*Nussbaumer, H., Schmid, H.M., Vogel, M.* **211**, L27
- Identification of the emission bands at  $\lambda\lambda$  6830, 7088  
*Schmid, H.M.* **211**, L31
- Photoionisation of the  $B^+(^1S^o)$  ground state  
*Tully, J.A., Le Dourneuf, M., Zeppen, C.J.* **211**, 485
- Photo-thermo-dissociation. I. A general mechanism for destroying molecules  
*Léger, A., Boissel, P., Désert, F.X., d'Hendecourt, L.* **213**, 351
- The relative importance of collisional and chemical pumping and radiative transfer effects in cosmic OH sources  
*Piehler, G., Kegel, W.H.* **214**, 339
- Revision and extension to low temperature of numerical estimates of the electron collisional rates for atomic hydrogen  
*Giovanardi, C., Palla, F.* **215**, 409; **77**, 157
- The lowest two electronic states of the hexatrienyl radical:  $C_6H$   
*Pauzat, F., Ellinger, Y.* **216**, 305
- Stark broadening of He II lines  
*Schöning, T., Butler, K.* **218**, 339; **78**, 51
- Stark broadening of He II lines and new results in astrophysical spectroscopy  
*Schöning, T., Butler, K.* **219**, 326
- The influence of temperature on the infrared spectrum of the coronene molecule  
*Bernard, J.P., d'Hendecourt, L.B., Léger, A.* **220**, 245
- Atomic partition functions for manganese I–III and cobalt I–III  
*Halenka, J.* **226**, 421; **81**, 303
- Binary stars;** see Stars: binaries
- BL Lacertae objects**
- Constraints on integrated nuclear rotation measures in core-dominated active galactic nuclei  
*O'Dea, C.P.* **210**, 35
- The extended emission line region of the active galaxy PKS 0521–36  
*Boisson, C., Cayatte, V., Sol, H.* **211**, 275
- Neutrons from active galactic nuclei  
*Kirk, J.G., Mastichiadis, A.* **213**, 75
- Long-term optical colour and spectral index variability of OJ 287  
*Takalo, L.O., Sillanpää, A.* **218**, 45
- The 1987 outburst of the BL Lacertid AO 0235+164  
*Webb, J.R., Smith, A.G.* **220**, 65
- Determination of several parameters of BL Lacertae objects and relativistic beaming  
*Xie, G.Z., Lu, J.F., Wu, J.X., Lu, R.W., Hao, P.J.* **220**, 89
- Optical spectroscopy of 1 Jy BL Lacertae objects and flat spectrum radio sources  
*Stickel, M., Fried, J.W., Kühr, H.* **223**, 383; **80**, 103
- The gravitational lens hypothesis for 0846+51 W1 supported by new observations  
*Stickel, M., Fried, J.W., Kühr, H.* **224**, L27
- Black holes**
- Tidally-detonated nuclear reactions in main sequence stars passing near a large black hole  
*Luminet, J.-P., Pichon, B.* **209**, 85
- Tidal pinching of white dwarfs  
*Luminet, J.-P., Pichon, B.* **209**, 103
- Stability of accretion in low mass X-ray binaries  
*Schwarzenberg-Czerny, A.* **210**, 174
- Neutrons from active galactic nuclei  
*Kirk, J.G., Mastichiadis, A.* **213**, 75
- SS 433 – the puzzle continues  
*Brinkmann, W., Kawai, N., Matsuoka, M.* **218**, L13
- The X-ray spectrum of modified  $\alpha$ -viscosity accretion disks  
*Nannurelli, M., Stella, L.* **226**, 343
- Catalogues and dictionaries**
- The third astrolabe catalogue at Valinhos  
*Clauzet, L.B.F.* **213**, 521; **77**, 67
- A catalogue of ground-based astrometric observations of the Martian satellites, 1877–1982  
*Morley, T.A.* **215**, 409; **77**, 209
- The Hydra I cluster of galaxies. V. A catalogue of galaxies in the cluster area  
*Richter, O.-G.* **215**, 410; **77**, 237
- A catalogue of right ascensions and declinations of FK4 stars  
*Sadžakov, S., Dačić, M.* **217**, 392; **77**, 411
- Erratum: Fe II References Catalogues (Ser. 77, No. 1, 155)  
*Viotti, R., Baratta, G.B.* **217**, 394; **77**, 155
- The transformation of coordinates between the systems of B1950.0 and J2000.0, and the principal galactic axes referred to J2000.0  
*Murray, C.A.* **218**, 325
- The DRAO Galactic plane survey. I.  $l = 140^\circ$ ,  $b = 0^\circ$   
*Green, D.A.* **218**, 343; **78**, 277
- A catalogue of expansion velocities of galactic planetary nebulae  
*Weinberger, R.* **218**, 343; **78**, 301
- BVR photoelectric photometry of late-type stars and a compilation of other data in the Small Magellanic Cloud  
*Maurice, E., Bouchet, P., Martin, N.* **219**, 365; **78**, 445
- Catalogue of stars measured in the Geneva Observatory photometric system (fourth edition)  
*Rufener, F.* **219**, 365; **78**, 469
- Erratum et addendum: Catalogue of Ap and Am stars in open clusters  
*Renson, P.* **219**, 366; **78**, 533
- Line calibrators at  $\lambda = 1.3$ , 2 and 3 mm  
*Mauersberger, R., Guélin, M., Martin-Pintado, J., Thum, C., Cernicharo, J., Hein, H., Navarro, S.* **223**, 376; **79**, 217
- A celestial reference frame based on extragalactic radio sources  
*Walter, H.G.* **223**, 376; **79**, 283
- A bibliography of colour magnitude diagram studies of star clusters in the Magellanic Clouds  
*Sagar, R., Pandey, A.K.* **223**, 379; **79**, 407
- Catalogue de vitesses radiales moyennes stellaires (catalogue sur bande magnétique)  
*Barbier-Brossat, M.* **223**, 381; **80**, 67

Strömgren and H $\beta$  photometry of stars earlier than G0 in 5 areas containing high latitude molecular clouds

*Franco, G.A.P.* **223**, 383; **80**, 127

Meter wavelength structures, flux densities and accurate positions of weak radio sources

*Akujor, C.E., Noshi, M.N., Kazès, I.* **224**, 363; **80**, 215

An extragalactic database. I. The catalogue of principal galaxies

*Patuel, G., Fouqué, P., Bottinelli, L., Gougouheim, L.* **224**, 366; **80**, 299

A catalogue of extended ionized nebulosities around active galactic nuclei

*Durret, F.* **226**, 418; **81**, 253

A reference catalogue of maser and thermal emission circumstellar SiO molecules

*Engels, D., Heske, A.* **226**, 421; **81**, 323

Up-to-date DDO photoelectric photometric catalogue

*Mermilliod, J.C., Nitschelm, C.* **226**, 421; **81**, 401

The Asiago Supernova Catalogue

*Barbon, R., Cappellaro, E., Turatto, M.* **226**, 421; **81**, 421

### Celestial mechanics

A survey of the motions of asteroids in the commensurabilities with Jupiter

*Yoshikawa, M.* **213**, 436

The third astrolabe catalogue at Valinhos

*Clauzet, L.B.F.* **213**, 521; **77**, 67

Phobos and Deimos astrometric observations from Mariner 9

*Duxbury, T.C., Callahan, J.D.* **216**, 284

The ages of asteroid families

*Farinella, P., Carpino, M., Froeschlé, Ch., Froeschlé, Cl., Gonczi, R., Knežević, Z., Zappalà, V.* **217**, 298

Tidal evolution in the Neptune-Triton system

*Chyba, C.F., Jankowski, D.G., Nicholson, P.D.* **219**, L23

Collisional probability of planetesimals revolving in the solar gravitational field. I. Basic formulation

*Nakazawa, K., Ida, S., Nakagawa, Y.* **220**, 293

The orbits of the satellites of Mars determined from Earth-based and spacecraft observations

*Sinclair, A.T.* **220**, 321

Chaotic dynamics of comet P/Halley

*Chirikov, B.V., Vecheslavov, V.V.* **221**, 146

Collisional probability of planetesimals revolving in the solar gravitational field. II. The validity of the two-body approximation

*Nakazawa, K., Ida, S., Nakagawa, Y.* **221**, 342

Secular perturbations of the Uranian satellites: theory and practice

*Malhotra, R., Fox, K., Murray, C.D., Nicholson, P.D.* **221**, 348

Analysis of the orbits of Titan, Hyperion, and Iapetus by numerical integration

*Harper, D., Taylor, D.B., Sinclair, A.T.* **221**, 359

Lyapunov characteristic numbers and the structure of phase-space

*Contopoulos, G., Barbanis, B.* **222**, 329

Integration theory for the elliptic restricted three-body problem

*Hagel, J., Kallrath, J.* **222**, 344

Planetary orbits in the elliptic restricted problem. II. The Sirius system

*Benest, D.* **223**, 361

Collisional probability of planetesimals revolving in the solar gravitational field. III

*Ida, S., Nakazawa, K.* **224**, 303

The very-high-eccentricity asymmetric expansion of the disturbing function near resonances of any order

*Ferraz-Mello, S., Sato, M.* **225**, 541

The orbits of the satellites of Mars from spacecraft and Earth-based observations

*Jacobson, R.A., Synnott, S.P., Campbell, J.K.* **225**, 548

The use of Kepler trajectories to calculate ion fluxes at multi-gigameter distances from comet Halley

*Daly, P.W.* **226**, 318

Stability of outer planetary orbits (P-types) in binaries

*Dvorak, R., Froeschlé, Ch., Froeschlé, Cl.* **226**, 335

### Chemical reactions

A refined study of the rate of the  $N^+ + H_2 \rightarrow NH^+ + H$  reaction under interstellar conditions: implications for  $NH_3$  production

*Galloway, E.T., Herbst, E.* **211**, 413

Proton transfer reactions of  $H_3^+$  with molecular neutrals at 30 K

*Marquette, J.B., Rebrion, C., Rowe, B.R.* **213**, L29

Infrared spectroscopy of astrophysical ices: new insights in the photochemistry

*Grim, R.J.A., Greenberg, J.M., de Groot, M.S., Baas, F., Schutte, W.A., Schmitt, B.* **218**, 341; **78**, 161

The production of  $C_nO$ ,  $HC_nO$ , and  $H_2C_nO$  molecules in dense interstellar clouds

*Adams, N.G., Smith, D., Giles, K., Herbst, E.* **220**, 269

The chemistry of silicon in dense interstellar clouds

*Herbst, E., Millar, T.J., Wlodek, S., Bohme, D.K.* **222**, 205

### Clusters: globular

Models of head-on collisions between a white dwarf and a low-mass main-sequence star

*Różyczka, M., Yorke, H.W., Bodenheimer, P., Müller, E., Hashimoto, M.* **208**, 69

Accurate position for the globular cluster X-ray source M15: AC211/X2127+119

*Geffert, M., Aurière, M., Ilovaisky, S.A., Terzan, A.* **209**, 423

Liouville's equation. I. Symmetries and classification of modes

*Sobouti, Y.* **210**, 18

Radio observations of CH in front of globular clusters and the galactic gas-to-dust ratio

*Mattila, K.* **210**, 389

An automated search for star clusters in the Magellanic Clouds. I. Description of the technique and application to a 6 square degree field near the bar of the LMC

*Bhatia, R.K., MacGillivray, H.T.* **211**, 9

Metal abundances in metal-poor globular clusters

*Gratton, R.G., Ortolani, S.* **211**, 41

Strömgren photometry of late-type supergiants in the Small Magellanic Cloud

*Richtler, T.* **211**, 199

Liouville's equation. III. Symmetries of the linearized equation

*Sobouti, Y., Samimi, J.* **214**, 92

Studies of dynamical properties of globular clusters. V. Implications of the observed flat MS mass function in 47 Tucanae

*Meylan, G.* **214**, 106

The X-ray source in the core of 47 Tucanae

*Aurière, M., Koch-Miramond, L., Ortolani, S.* **214**, 113

The luminosity distribution of population II red giants

*Castellani, V., Chieffi, A., Norci, L.* **216**, 62

BVRI CCD photometry of the globular cluster NGC 3201

*Alcaino, G., Liller, W., Alvarado, F.* **216**, 68

The ages of globular clusters and the Sandage period-shift effect

*Buonanno, R., Corsi, C.E., Fusi Pecci, F.* **216**, 80



- A comparative study of Na I and Ca II infrared lines in stars, star clusters and galaxy nuclei: an alternative to the dwarf-enriched population  
*Alloin, D., Bica, E.* **217**, 57
- Observed dynamical parameters of the disk clusters of the Large Magellanic Cloud. II  
*Chrysovergis, M., Kontizas, M., Kontizas, E.* **217**, 392; **77**, 357
- Systems of selfgravitating classical particles with a cutoff in their distribution function  
*Merafina, M., Ruffini, R.* **221**, 4
- NGC 6752: a globular cluster with a resolved post-collapse core?  
*Aurière, M., Ortolani, S.* **221**, 20
- Evolution of extreme horizontal branch stars  
*Caloi, V.* **221**, 27
- Rapid changes in the integrated light of young star clusters  
*Arimoto, N., Bica, E.* **222**, 89
- EXOSAT observations of five luminous globular cluster X-ray sources  
*Parmar, A.N., Stella, L., Giommi, P.* **222**, 96
- Weakly interacting massive particles and stellar structure  
*Bouquet, A., Kaplan, J., Martin, F.* **222**, 103
- The Oosterhoff dichotomy revisited. II. Pulsational constraints on the luminosity of RR Lyrae variables in OoII and OoI globular clusters  
*Caputo, F., Castellani, V., Tornambè, A.* **222**, 121
- An infrared search for obscured globular clusters associated with X-ray sources  
*van Paradijs, J., Isaacman, R.* **222**, 129
- Spectroscopy and deep photometry of Pal 3 and C0422-213  
*Ortolani, S., Gratton, R.G.* **223**, 375; **79**, 155
- A bibliography of colour magnitude diagram studies of star clusters in the Magellanic Clouds  
*Sagar, R., Pandey, A.K.* **223**, 379; **79**, 407
- Erratum:* Spheroidal systems as a one-parameter family of mass at their birth  
*Yoshii, Y., Arimoto, N.* **224**, 361
- Erratum:* Chemical and photometric properties of a galactic wind model for elliptical galaxies  
*Arimoto, N., Yoshii, Y.* **224**, 361
- Chemical evolution in the Magellanic Clouds. IV. Metal abundance of a star in the young globular cluster NGC 1818 in the Large Magellanic Cloud  
*Richtler, T., Spite, M., Spite, F.* **225**, 351
- High resolution spectroscopy of near main sequence B stars of blue globular clusters in the Magellanic Clouds  
*Jüttner, A., Reitermann, A., Stahl, O., Wolf, B.* **226**, 415; **81**, 93
- Clusters: of galaxies**
- Probable additional gravitational images related to the Cl 2244-02 arc and B, V, R photometry of the cluster core  
*Hammer, F., Le Fèvre, O., Jones, J., Rigaut, F., Soucail, G.* **208**, L7
- Intrinsic versus observed properties in near large spherical structures  
*Jordana Rdz, J.J., Salvador-Solé, E., Solanes, J.M.* **209**, 15
- H I observations of galaxies in the Virgo cluster of galaxies. II. Global parameters of the galaxies  
*Huchtmeier, W.K., Richter, O.-G.* **210**, 1
- Fragmenting the universe. II. Voronoi vertices as Abell clusters  
*van de Weygaert, R., Icke, V.* **213**, 1
- Determination of the level of the MHD turbulence in 4C 21.44  
*Roland, J., Rhee, G.F.R.N.* **213**, 10
- Evidence for gas around two radio galaxies at the Coma cluster periphery  
*Venturi, T., Feretti, L., Giovannini, G.* **213**, 49
- Radio surveys and source counts at 408 MHz and 1420 MHz towards the Abell 1314 cluster of galaxies  
*Vallée, J.P., Roger, R.S.* **213**, 520; **77**, 31
- The group environment of Seyfert galaxies. II. Spectrophotometry of galaxies in groups  
*Fricke, K.J., Kollatschny, W.* **213**, 521; **77**, 75
- Galaxy density in biased theories of galaxy origin  
*Borgani, S., Bonometto, S.A.* **215**, 17
- The Hydra I cluster of galaxies. V. A catalogue of galaxies in the cluster area  
*Richter, O.-G.* **215**, 410; **77**, 237
- A search for Lyman- $\alpha$  emitting objects in a structure between a quasar pair at a redshift of 2  
*Rhee, G.F.R.N., Webb, J.K., Katgert, P.* **217**, 1
- A wide angle redshift survey of the Hydra-Centaurus region  
*Fairall, A.P., Vettolani, G., Chincarini, G.* **218**, 343; **78**, 269
- The fractal dimension in the large-scale distribution of galaxies with different luminosities  
*Wen, Z., Deng, Z.-G., Liu, Y.-Z., Xia, X.-Y.* **219**, 1
- Richness-dependence of cluster-cluster correlations  
*Börner, G., Houjun Mo, Yaoquan Chu* **219**, 29
- The group environment of Seyfert galaxies. I  
*Kollatschny, W., Fricke, K.J.* **219**, 34
- A compact group in Virgo  
*Mamon, G.A.* **219**, 98
- The gravitational lens effect of the Virgo Supercluster  
*Xu Chongming, Fabbri, R., Wu Xuejun* **220**, 30
- Large-scale anisotropy in the sky distribution of extragalactic radio sources  
*Shaver, P.A., Pierre, M.* **220**, 35
- Radial velocities of 13 southern rich clusters  
*Vettolani, G., Cappi, A., Chincarini, G., Focardi, P., Garilli, B., Gregorini, L., Maccagni, D.* **220**, 344; **79**, 147
- Correlation functions of galaxies with different weightings according to luminosity and mass  
*Börner, G., Houjun Mo, Youyuan Zhou* **221**, 191
- The existence of very large-scale structures in the universe  
*Goicoechea, L.J., Martin-Mirones, J.M.* **221**, 197
- Detection of distant galaxy clusters  
*Cappi, A., Chincarini, G., Conconi, P., Vettolani, G.* **223**, 1
- Geometrical analysis of galaxy clustering: dependence on luminosity  
*Börner, G., Houjun Mo* **223**, 25
- Multifrequency observations of the tailed radio source NGC 4869 in the Coma cluster  
*Dallacasa, D., Feretti, L., Giovannini, G., Venturi, T.* **223**, 379; **79**, 391
- A percolation analysis of cluster superclustering  
*Börner, G., Houjun Mo* **224**, 1
- The frequency of chance alignments of galaxies in loose groups  
*Walke, D.G., Mamon, G.A.* **225**, 291
- Distribution and motions of atomic hydrogen in lenticular galaxies. IX. NGC 3941 and NGC 4694  
*van Driel, W., van Woerden, H.* **225**, 317
- High resolution observations of the narrow angle tail radio galaxy in Abell 115  
*Gregorini, L., Bondi, M.* **225**, 333

The angular two-point correlation function and the cellular fractal structure of the Universe

Calzetti, D., Giavalisco, M., Ruffini, R. **226**, 1

Giant luminous arcs from lensing: determination of the mass distribution inside distant cluster cores

Hammer, F., Rigaut, F. **226**, 45

Scale-invariant matter distribution in the universe. II. Bifractal behaviour

Balian, R., Schaeffer, R. **226**, 373

### Clusters: open, and associations

Blue stragglers and the binary hypothesis

Manteiga, M., Pickles, A.J., Martinez Roger, C. **210**, 66

The Pleiades age and the sequential star formation

Mazzei, P., Pigatto, L. **213**, L1

The galactic giant H II region NGC 3603

Melnick, J., Tapia, M., Terlevich, R. **213**, 89

A photometric study of F-type stars of high galactic latitude

Arellano Ferro, A., Giridhar, S., Chavez, M., Parrao, L. **214**, 123

Stellar photometric stability. I. The open clusters Melotte 105, NGC 2660 and NGC 4755

Frandsen, S., Dreyer, P., Kjeldsen, H. **215**, 287

New *UBVRI* photoelectric photometry in the field of the open cluster NGC 2467

Feinstein, A., Vázquez, R.A. **215**, 411; 77, 321

Physical parameters of stars in the Scorpio-Centaurus OB association

de Geus, E.J., de Zeeuw, P.T., Lub, J. **216**, 44

Discovery of a new extremely hot DA white dwarf close to the open cluster NGC 6405

Koester, D., Reimers, D. **217**, L1

A comparative study of Na I and Ca II infrared lines in stars, star clusters and galaxy nuclei: an alternative to the dwarf-enriched population

Alloin, D., Bica, E. **217**, 57

Photographic *UBV* photometry to  $V \sim 21$  in the Puppis window

Cameron Reed, B. **217**, 393; 77, 447

Spectroscopic identification of white dwarfs in galactic clusters. V. NGC 3532

Reimers, D., Koester, D. **218**, 118

*UBV* photometry and the structure of the galactic cluster NGC 2516

Dachs, J., Kabus, H. **218**, 338; 78, 25

Globular clusters in the Large Magellanic Cloud: CCD photometry of NGC 1866

Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S. **218**, 339; 78, 89

Positions of southern open cluster stars proposed for the HIP-PARCOS mission

Tucholke, H.-J. **218**, 341; 78, 187

The effect of gas removal on the dynamical evolution of young stellar clusters

Verschueren, W., David, M. **219**, 105

The calibration of intrinsic colours in *wby* photometry

Delgado, A.J., Alfaro, E.J. **219**, 121

Red giants in open clusters. I. Binarity and stellar evolution in five Hyades-generation clusters: NGC 2447, 2539, 2632, 6633 and 6940

Mermilliod, J.-C., Mayor, M. **219**, 125

Globular clusters in the Large Magellanic Cloud: NGC 1866, a test for convective overshoot

Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S. **219**, 167

Photometric metal abundances of high-luminosity red stars in young and intermediate-age open clusters

Clariá, J.J., Lapasset, E., Minniti, D. **219**, 363; 78, 363

*Erratum et addendum*: Catalogue of Ap and Am stars in open clusters

Renson, P. **219**, 366; 78, 533

Am stars of the Hyades cluster: temperatures, lithium, and the heavier elements, Al, Si, and Fe

Burkhart, C., Coupry, M.F. **220**, 197

Red giants in open clusters. II. Orbits of ten spectroscopic binaries in NGC 2360, 2437, 2447, 5822, 5823, and 6475

Mermilliod, J.-C., Mayor, M., Andersen, J., Nordström, B., Lindgren, H., Duquennoy, A. **220**, 341; 79, 11

Two more very massive stars resolved

Heydari-Malayeri, M., Magain, P., Remy, M. **222**, 41

Rapid changes in the integrated light of young star clusters

Arimoto, N., Bica, E. **222**, 89

Discovery of a planetary nebula in the field of the open cluster NGC 6087

Koester, D., Reimers, D. **223**, 326

A bibliography of colour magnitude diagram studies of star clusters in the Magellanic Clouds

Sagar, R., Pandey, A.K. **223**, 379; 79, 407

Quantitative spectroscopy of O-stars in the Magellanic Clouds. I. The young open cluster NGC 346 in the SMC

Kudritzki, R.P., Cabanne, M.L., Husfeld, D., Niemela, V.S., Groth, H.G., Puls, J., Herrero, A. **226**, 235

*wby* photometry for 67 stars in the region of  $\alpha$  Persei

Trullols, E., Rosselló, G., Jordi, C., Lahulla, F. **226**, 415; 81, 47

Photometry and spectroscopy of the open cluster NGC 2112

Richtler, T., Kaluzny, J. **226**, 418; 81, 225

The upper main sequence of OB associations. II. The single-lined O stars: spectral classification of northern stars and lines of C and N

Mathys, G. **226**, 418; 81, 237

**Collisions, atomic and molecular**; see Atomic and molecular data

### Comets

Restoration of Vega-1 pictures of the nucleus of comet P/Halley: a new method revealing clear contours and jets

Dimarellis, E., Bertaux, J.L., Abergel, A. **208**, 327

Time-dependent MHD simulations for cometary plasmas

Schmidt-Voigt, M. **210**, 433

The photodissociation of water in cometary atmospheres

Crovisier, J. **213**, 459

Search for water in comet P/Halley at 380 GHz

Gulkis, S., Batelaan, P.D., Frerking, M.A., Klein, M.J., Kuiper, T.B.H., Pickett, H.M., Schaefer, M.M., Wannier, P., Bockelée-Morvan, D., Crovisier, J., Encrenaz, P.J., Zimmermann, P., Destombes, J.L. **213**, 465

Polarimetry of grains in the coma of P/Halley. II. Interpretation

Dollfus, A. **213**, 469

The colour of comet P/Halley's nucleus and dust

Thomas, N., Keller, H.U. **213**, 487

CN-shell structures and dynamics of the nucleus of comet P/Halley

Schulz, R., Schlosser, W. **214**, 375

Polarimetry of comet Bradfield (1987s)

Kikuchi, S., Mikami, Y., Mukai, T., Mukai, S. **214**, 386

The motion of several periodic comets

Forti, G. **215**, 381

- The nature of the 2.8- $\mu$ m emission feature in cometary spectra  
*Bockelée-Morvan, D., Crovisier, J.* **216**, 278
- Evaluation of cometary dust parameters from numerical simulations: comparison with an analytical approach and the role of anisotropic emissions  
*Fulle, M.* **217**, 283
- Molecular band polarization in comet P/Halley  
*Sen, A.K., Joshi, U.C., Deshpande, M.R.* **217**, 307
- Observations of the OH radio lines in comet P/Halley 1986 III  
*Gérard, E., Bockelée-Morvan, D., Bourgois, G., Colom, P., Crovisier, J.* **217**, 392; **77**, 379
- Post-perihelion observations of comet P/Halley at  $r=8.5$  AU  
*West, R.M., Jørgensen, H.E.* **218**, 307
- Post-perihelion photometry of comet Liller (1988 a) at Catania (Italy) Observatory  
*Baratta, G.A., Catalano, F.A., Leone, F., Strazzulla, G.* **219**, 322
- Photometric investigation of comets Bradfield 1987 S and P/Borrelly  
*Boehnhardt, H., Drechsel, H., Vanysek, V., Waha, L.* **220**, 286
- Changes in the extent of the emission region on a cometary nucleus and its effect on the activity index  
*Hughes, D.W.* **220**, 301
- Chaotic dynamics of comet P/Halley  
*Chirikov, B.V., Vecheslavov, V.V.* **221**, 146
- Comet P/Halley at a heliocentric preperihelion distance of 2.6 AU: jet activity and properties of the dust coma  
*Lamy, P.L., Malburet, P., Llebaria, A., Koutchmy, S.* **222**, 316
- Radio continuum observations of comet P/Halley at 250 GHz  
*Altenhoff, W.J., Huchtmeier, W.K., Kreysa, E., Schmidt, J., Schraml, J.B., Thum, C.* **222**, 323
- Erratum: CN-shell structures and dynamics of the nucleus of comet P/Halley  
*Schulz, R., Schlosser, W.* **222**, 367
- The  $\beta$  Pictoris circumstellar disk. IX. Theoretical results on the infall velocities of Ca II, Al III, and Mg II  
*Beust, H., Lagrange-Henri, A.M., Vidal-Madjar, A., Ferlet, R.* **223**, 304
- Inferences concerning water vapour viscosity and mean free path at low temperatures  
*Crifo, J.F.* **223**, 365
- Geminid meteoroids traced to cometary activity on Phaethon  
*Gustafson, B.A.S.* **225**, 533
- Evidence for near-surface breezes on comet P/Halley  
*Keller, H.U., Thomas, N.* **226**, L9
- The use of Kepler trajectories to calculate ion fluxes at multi-gigameter distances from comet Halley  
*Daly, P.W.* **226**, 318
- Convection**
- The structure equations of contact binaries and the light curve paradox  
*Kähler, H.* **209**, 67
- Radiation-hydrodynamic equations for stellar oscillations  
*Da-run Xiong* **209**, 126
- Integral constraints on convective overshooting  
*Roxburgh, I.W.* **211**, 361
- Numerical simulations of nonlocal convection  
*Da-run Xiong* **213**, 176
- Turbulent transport of magnetic fields. IV. Damping of the mean field  $\langle B \rangle$  in  $\alpha^2$ -dynamos with  $\alpha \propto \cos \theta$   
*van Geffen, J.H.G.M., Hoyng, P.* **213**, 429
- Mesogranulation: a convective phenomenon  
*Deubner, F.-L.* **216**, 259
- AMLT: anisotropic mixing length theory  
*Canuto, V.M.* **217**, 333
- Tidal evolution of close binary stars. I. Revisiting the theory of the equilibrium tide  
*Zahn, J.-P.* **220**, 112
- The height dependence of vertical and horizontal velocities attributed to the convective overshoot in the solar atmosphere  
*Nesis, A., Mattig, W.* **221**, 130
- Current sheet as a diagnostic for the subphotospheric structure of a spot  
*Jahn, K.* **222**, 264
- Cosmic background radiation**
- Gauge-invariant cosmological perturbation theory for collisionless matter: numerical results  
*Durrer, R.* **208**, 1
- The existence of very large-scale structures in the universe  
*Goicoechea, L.J., Martin-Mirones, J.M.* **221**, 197
- Search for extragalactic backgrounds: a balloon-borne 4-band FIR differential photometer with large throughput  
*Masi, S., Dall'Oglio, G., de Bernardis, P., de Santis, E., Epifani, M., Giovannozzi, E., Guarini, G., Melchiorri, F., Boscaleri, A., Natale, V., Guidi, I.* **226**, 357
- Cosmic rays; see also Sun (the): cosmic rays**
- A numerical model for a cosmic ray modulation barrier in the outer heliosphere  
*Potgieter, M.S., Le Roux, J.A.* **209**, 406
- Cygnus X-3 at high energies: a critical analysis of observational results  
*Chardin, G., Gerbier, G.* **210**, 52
- Erratum: A bump in the ultra-high energy cosmic ray spectrum  
*Berezinsky, V.S., Grigor'eva, S.I.* **210**, 462
- M82, the Galaxy, and the dependence of cosmic ray energy production on the supernova rate  
*Völk, H.J., Klein, U., Wiebeinski, R.* **213**, L12
- Configuration of large-scale magnetic fields in spiral galaxies  
*Krashenninnikova (Baryshnikova), Ruzmaikin, A., Sokoloff, D., Shukurov, A.* **213**, 19
- PeV inverse Compton gamma rays from Cygnus X-3  
*Schlickeiser, R.* **213**, L23
- Neutrons from active galactic nuclei  
*Kirk, J.G., Mastichiadis, A.* **213**, 75
- On the origin of high energy cosmic rays. I. Pregalactic explosion  
*Parvaneh, D.L., Schatzman, E., Lagage, P.O.* **213**, 287
- Observable parameters of spiral galaxies and galactic magnetic fields  
*Starchenko, S.V., Shukurov, A.M.* **214**, 47
- The  $^{13}\text{C}/^{12}\text{C}$  ratio in cosmic ray sources  
*Webber, W.R., Soutoul, A.W.* **215**, 128
- Distributed processes as contributors to the acceleration of cosmic rays  
*Giler, M., Osborne, J.L., Ptuskin, V.S., Szabelska, B., Wdowczyk, J., Wolfendale, A.W.* **217**, 311
- Particle acceleration at modified shock fronts. I. The power-law spectrum for relativistic flows  
*Schneider, P., Kirk, J.G.* **217**, 344
- The correlation between radio and far-infrared emission from disk galaxies: a calorimeter theory  
*Völk, H.J.* **218**, 67

- Implications for the detection of ultra-high-energy gamma rays from Sco X-1  
*Mitra, A.K.* **219**, L1
- The synchrotron spectra of radio hot spots  
*Meisenheimer, K., Röser, H.-J., Hiltner, P.R., Yates, M.G., Longair, M.S., Chini, R., Perley, R.A.* **219**, 63
- The origin of flat radio spectra in shell-type supernova remnants  
*Schlickeiser, R., Fürst, E.* **219**, 192
- Solution topologies for cosmic ray modified galactic winds. I. Spherical symmetry  
*Zank, G.P.* **225**, 37
- Simplified models for the evolution of supernova remnants including particle acceleration  
*Drury, L.O'C., Markiewicz, W.J., Völk, H.J.* **225**, 179
- Particle acceleration at modified shock fronts. II. The problem of injection  
*Kirk, J.G., Schneider, P.* **225**, 559
- Radio continuum observations of four edge-on spiral galaxies  
*Hummel, E., van der Hulst, J.M.* **226**, 416; **81**, 51
- Short-term cosmic-ray increases and magnetic cloud-like structures during Forbush decreases  
*Iucci, N., Parisi, M., Signorini, C., Storini, M., Villaresi, G.* **226**, 421; **81**, 367
- Cosmogony**
- The circumstellar gas around  $\beta$  Pictoris. VIII. Evidence for a clumpy structure of the infalling gas  
*Lagrange-Henri, A.M., Beust, H., Ferlet, R., Vidal-Madjar, A.* **215**, L5
- A scenario for the formation of astronomical objects from superstrings  
*Brosche, P., Tassie, L.J.* **219**, 13
- Tidal evolution in the Neptune-Triton system  
*Chyba, C.F., Jankowski, D.G., Nicholson, P.D.* **219**, L23
- The  $\beta$  Pictoris circumstellar disk. IX. Theoretical results on the inflow velocities of Ca II, Al III, and Mg II  
*Beust, H., Lagrange-Henri, A.M., Vidal-Madjar, A., Ferlet, R.* **223**, 304
- Collisional probability of planetesimals revolving in the solar gravitational field. III  
*Ida, S., Nakazawa, K.* **224**, 303
- Cosmology**
- Gauge-invariant cosmological perturbation theory for collisionless matter: numerical results  
*Durrer, R.* **208**, 1
- Probable additional gravitational images related to the C1 2244-02 arc and B, V, R photometry of the cluster core  
*Hammer, F., Le Fèvre, O., Jones, J., Rigaut, F., Soucail, G.* **208**, L7
- The two-point correlation functions of galaxies with different luminosities  
*Börner, G., Deng, Z.-G., Xia, X.-Y.* **209**, 1
- Erratum:** A bump in the ultra-high energy cosmic ray spectrum  
*Berezinsky, V.S., Grigor'eva, S.I.* **210**, 462
- Fragmenting the universe. II. Voronoi vertices as Abell clusters  
*van de Weygaert, R., Icke, V.* **213**, 1
- On the origin of high energy cosmic rays. I. Pregalactic explosion  
*Parvaneh, D.L., Schatzman, E., Lagage, P.O.* **213**, 287
- Radio surveys and source counts at 408 MHz and 1420 MHz towards the Abell 1314 cluster of galaxies  
*Vallée, J.P., Roger, R.S.* **213**, 520; **77**, 31
- The statistical properties of gravitational lenses of galaxies and quasars  
*Xiangping Wu* **214**, 43
- The value of the time delay  $\Delta T(A, B)$  for the "double" quasar 0957+561 from optical photometric monitoring  
*Vanderriest, C., Schneider, J., Herpe, G., Chevreton, M., Moles, M., Wlérick, G.* **215**, 1
- No quasar clustering at  $z > 2$   
*Yaoquan Chu, Xingfen Zhu* **215**, 14
- A search for Lyman- $\alpha$  emitting objects in a structure between a quasar pair at a redshift of 2  
*Rhee, G.F.R.N., Webb, J.K., Katgert, P.* **217**, 1
- How to determine a Tolman-Bondi universe from ideal observable and theoretical relations  
*Rindler, W., Suson, D.* **218**, 15
- Correlations in the absorption lines of the quasar Q0420-388  
*Hongguang Bi, Börner, G., Yaoquan Chu* **218**, 19
- A wide angle redshift survey of the Hydra-Centaurus region  
*Fairall, A.P., Vettolani, G., Chincarini, G.* **218**, 343; **78**, 269
- The fractal dimension in the large-scale distribution of galaxies with different luminosities  
*Wen, Z., Deng, Z.-G., Liu, Y.-Z., Xia, X.-Y.* **219**, 1
- The effect of primordial perturbations on the extragalactic infrared background  
*Fabbri, R., Lucchin, F., Matarrese, S.* **219**, 7
- A scenario for the formation of astronomical objects from superstrings  
*Brosche, P., Tassie, L.J.* **219**, 13
- Richness-dependence of cluster-cluster correlations  
*Börner, G., Houjun Mo, Yaoquan Chu* **219**, 29
- Scale-invariant matter distribution in the universe. I. Counts in cells  
*Balian, R., Schaeffer, R.* **220**, 1
- The gravitational lens effect of the Virgo Supercluster  
*Xu Chongming, Fabbri, R., Wu Xuejun* **220**, 30
- Large-scale anisotropy in the sky distribution of extragalactic radio sources  
*Shaver, P.A., Pierre, M.* **220**, 35
- Amplification near gravitational lens caustics  
*Kayser, R., Witt, H.J.* **221**, 1
- Correlation functions of galaxies with different weightings according to luminosity and mass  
*Börner, G., Houjun Mo, Youyuan Zhou* **221**, 191
- The existence of very large-scale structures in the universe  
*Goicoechea, L.J., Martin-Mirones, J.M.* **221**, 197
- The number excess of galaxies around high redshift quasars  
*Schneider, P.* **221**, 221
- The periodicity in the redshift distribution of the Lyman-alpha forest  
*Yaoquan Chu, Xingfen Zhu* **222**, 1
- A class of solutions in Newtonian cosmology and the pancake theory  
*Buchert, T.* **223**, 9
- Geometrical analysis of galaxy clustering: dependence on luminosity  
*Börner, G., Houjun Mo* **223**, 25
- Chemical evolution of high redshift galaxies  
*Fritze-v.-Alvensleben, U., Krüger, H., Fricke, K.J., Loose, H.-H.* **224**, L1
- A percolation analysis of cluster superclustering  
*Börner, G., Houjun Mo* **224**, 1



- Active galactic nuclei and the spectrum of the X-ray background  
*Setti, G., Woltjer, L.* **224**, L21
- Two-fluid model of superluminal radio sources: application to cosmology  
*Pelletier, G., Roland, J.* **224**, 24
- The angular two-point correlation function and the cellular fractal structure of the Universe  
*Calzetti, D., Giavalisco, M., Ruffini, R.* **226**, 1
- Giant luminous arcs from lensing: determination of the mass distribution inside distant cluster cores  
*Hammer, F., Rigaut, F.* **226**, 45
- Search for extragalactic backgrounds: a balloon-borne 4-band FIR differential photometer with large throughput  
*Masi, S., Dall'Oglio, G., de Bernardis, P., de Santis, E., Epifani, M., Giovannozzi, E., Guarini, G., Melchiorri, F., Boscaleri, A., Natale, V., Guidi, I.* **226**, 357
- Scale-invariant matter distribution in the universe. II. Bifractal behaviour  
*Balian, R., Schaeffer, R.* **226**, 373
- Data analysis; see also Image processing**
- The UU Herculis star HD 161796  
*Mantegazza, L., Antonello, E., Poretti, E.* **208**, 91
- Terrestrial transmitters as phase calibrators in disconnected interferometry  
*Woan, G., Duffett-Smith, P.J.* **208**, 381
- Intrinsic versus observed properties in near large spherical structures  
*Jordana Rdz, J.J., Salvador-Solé, E., Solanes, J.M.* **209**, 15
- Differential rotation of the Sun's magnetic field pattern  
*Stenflo, J.O.* **210**, 403
- Astrometric plate reductions with orthogonal functions  
*Brosche, P., Wildermann, E., Geffert, M.* **211**, 239
- Studies of dynamical properties of globular clusters. V. Implications of the observed flat MS mass function in 47 Tucanae  
*Meylan, G.* **214**, 106
- An improved technique for the search for optical emission from radio pulsars, and its application to PSR 0301 + 19, 1919 + 21 and 2303 + 30  
*Perryman, M.A.C., Jakobsen, P., Colina, L., Lelièvre, G., Macchetto, F., Nieto, J.L., di Serego Alighieri, S.* **215**, 195
- Speckle interferometric study of the solar granulation from centre to limb  
*Druesne, P., Borgnino, J., Martin, F., Ricort, G., Aime, C.* **217**, 229
- Detection of weak signals in TeV gamma-ray astronomy: de excess vs. periodic amplitude  
*Lewis, D.A.* **219**, 352
- Non-radial oscillations in HR 1225,  $\sigma^1$  Eridani and HR 547  
*Poretti, E.* **220**, 144
- Multi-spectral analysis of total solar irradiance variations  
*Fröhlich, C., Pap, J.* **220**, 272
- A powerful test for weak periodic signals with unknown light curve shape in sparse data  
*De Jager, O.C., Swanepoel, J.W.H., Raubenheimer, B.C.* **221**, 180
- Imaging the gamma-ray sky with Compton telescopes  
*von Ballmoos, P., Diehl, R., Schönfelder, V.* **221**, 396
- Derivation of photographic characteristic curves with a birefringent calibration device  
*Griffin, R. & R.* **222**, 358
- The phase problem in optical interferometry: error analysis in the presence of photon noise  
*Chelli, A.* **225**, 277
- A search for high-velocity H I in nearby face-on spiral galaxies  
*Wakker, B.P., Broeils, A.H., Tilanus, R.P.J., Sancisi, R.* **226**, 57
- Model-independent retrieval of brightness profiles from lunar occultation lightcurves in the near infrared domain  
*Richichi, A.* **226**, 366
- Dense matter**
- Phase transitions in dense matter and radial pulsations of neutron stars  
*Haensel, P., Zdunik, J.L., Schaeffer, R.* **217**, 137
- Composition and equation of state of cold catalyzed matter below neutron drip  
*Haensel, P., Zdunik, J.L., Dobaczewski, J.* **222**, 353
- Distances, distance scale**
- Theoretical models for the continuum and colors of SN 1979 C and SN 1980 K  
*Hauschildt, P.H., Shaviv, G., Wehrse, R.* **210**, 262
- Studies of late-type binaries. I. The physical parameters of 44 Bootis ABC  
*Hill, G., Fisher, W.A., Holmgren, D.* **211**, 81
- Distances and mass distribution of central stars of planetary nebulae  
*Weidemann, V.* **213**, 155
- A photometric study of F-type stars of high galactic latitude  
*Arellano Ferro, A., Giridhar, S., Chavez, M., Parrao, L.* **214**, 123
- The value of the time delay  $\Delta T(A, B)$  for the "double" quasar 0957 + 561 from optical photometric monitoring  
*Vanderriest, C., Schneider, J., Herpe, G., Chevreton, M., Moles, M., Wlérick, G.* **215**, 1
- The structure of the Small Magellanic Cloud  
*Martin, N., Maurice, E., Lequeux, J.* **215**, 219
- New UVRI photoelectric photometry in the field of the open cluster NGC 2467  
*Feinstein, A., Vázquez, R.A.* **215**, 411; 77, 321
- Physical parameters of stars in the Scorpio-Centaurus OB association  
*de Geus, E.J., de Zeeuw, P.T., Lub, J.* **216**, 44
- Empirical amplitude-luminosity relation of S Doradus variables and extragalactic distances  
*Wolf, B.* **217**, 87
- The evolution of planetary nebulae nuclei: models against observations  
*Tylenda, R., Stasińska, G.* **217**, 209
- Two more very massive stars resolved  
*Heydari-Malayeri, M., Magain, P., Remy, M.* **222**, 41
- OB star distances and the rotation curve of the outer Galaxy  
*Hron, J.* **222**, 85
- The distance of the helium-variable B star HD 37479  
*Hunger, K., Heber, U., Groote, D.* **224**, 57
- The distance and structure of the Coalsack. II. Analysis  
*Seidensticker, K.J., Schmidt-Kaler, Th.* **225**, 192
- A photometric study of wide visual double stars with significant relative proper motion  
*Sinachopoulos, D.* **226**, 415; **81**, 103
- Double stars; see Stars: binaries**
- Dust; see Interstellar medium: dust; Interplanetary medium**

**Earth: atmosphere**

Site testing for an optical observatory in Turkey

*Aslan, Z., Aydın, C., Tunca, Z., Demircan, O., Derman, E., Gölbaşı, O., Marşoğlu, A.* **208**, 385

The gamma-ray emissivity of the Earth's atmosphere

*Dean, A.J., Lei Fan, Byard, K., Goldwurm, A., Hall, C.J., Harding, J.S.J.* **219**, 358

Comparison of optical measurements of seeing and calculations based on radiosonde data

*Hecquet, J., Klaus, V.* **225**, 585

**Earth: general**

Turbulent transport of magnetic fields. IV. Damping of the mean field  $\langle B \rangle$  in  $\alpha^2$ -dynamoes with  $\alpha \propto \cos \theta$

*van Geffen, J.H.G.M., Hoyng, P.* **213**, 429

Periodic changes in Earth's rotation due to oceanic tides

*Brosche, P., Seiler, U., Sündermann, J., Wunsch, J.* **220**, 318

Intercomparison of the Earth rotation parameters determined by two independent VLBI networks

*Yoshino, T., Takahashi, Y., Kawaguchi, N., Heki, K., Yokoyama, K., Manabe, S.* **224**, 316

**Earth: rotation**

Non-tidal changes in the Earth's rate of rotation as deduced from medieval eclipse observations

*Stephenson, F.R., Said, S.S.* **215**, 181

A 120-day oscillation in the solar activity and geophysical phenomena

*Djuovic, D., Pâquet, P.* **218**, 302

Periodic changes in Earth's rotation due to oceanic tides

*Brosche, P., Seiler, U., Sündermann, J., Wunsch, J.* **220**, 318

**Eclipses**

Non-tidal changes in the Earth's rate of rotation as deduced from medieval eclipse observations

*Stephenson, F.R., Said, S.S.* **215**, 181

**Editorials**

Editorial

*Contopoulos, G.* **211**, E1

**Elementary particles**

Gauge-invariant cosmological perturbation theory for collisionless matter: numerical results

*Durrer, R.* **208**, 1

Photoproduction of high-frequency gravitational radiation by galactic and extragalactic sources

*Papini, G., Valluri, S.-R.* **208**, 345

Anisotropic neutrino emission from rotating protoneutron stars

*Janka, H.-T., Mönchmeyer, R.* **209**, L5

Non-baryonic matter from the halo and the solar neutrino problem

*Finzi, A., Harpaz, A.* **211**, 441

The modified correlation mass method for detecting neutrino mass from astrophysical neutrino bursts

*Chan, K.L., Chiu, H.-Y., Kondo, Y.* **215**, 387

Radiation from young SN II shells produced by cosmic rays accelerated in shock waves

*Berezinsky, V.S., Ptuskin, V.S.* **215**, 399

Statistical distributions and gravitational halos

*Membrado, M., Pacheco, A.F., Sañudo, J.* **217**, 92

Life and death of cosmions in stars

*Bouquet, A., Salati, P.* **217**, 270

The determination of the neutrino mass in neutrino astronomy

*Roos, M.* **218**, 334

A scenario for the formation of astronomical objects from superstrings

*Brosche, P., Tassie, L.J.* **219**, 13

Monte Carlo simulations of neutrino in type II supernovae

*Janka, H.-T., Hillebrandt, W.* **219**, 363; **78**, 375

Systems of selfgravitating classical particles with a cutoff in their distribution function

*Merafina, M., Ruffini, R.* **221**, 4

Photomeson production in active galactic nuclei

*Mannheim, K., Biermann, P.L.* **221**, 211

Weakly interacting massive particles and stellar structure

*Bouquet, A., Kaplan, J., Martin, F.* **222**, 103

Neutrino emission from type II supernovae: an analysis of the spectra

*Janka, H.-T., Hillebrandt, W.* **224**, 49

Hydrostatic post bounce configurations of collapsed rotating iron cores: neutrino emission

*Janka, H.-T., Mönchmeyer, R.* **226**, 69

**Ephemerides**

Astrolabe observations of Uranus at Santiago

*Noël, F.* **213**, 521; **77**, 73

Phobos and Deimos astrometric observations from Mariner 9

*Duxbury, T.C., Callahan, J.D.* **216**, 284

The concepts of International Atomic Time (TAI) and Terrestrial Dynamic Time (TDT)

*Huang, T.-Y., Zhu, J., Xu, B.-X., Zhang, H.* **220**, 329

**Errata**

Erratum: The H<sub>I</sub>-properties of bright southern galaxies

*Becker, R., Mebold, U., Reif, K., van Woerden, H.* **214**, 402

Erratum: A multi-line NH<sub>3</sub> study of the M 17SW molecular cloud

*Güsten, R., Fiebig, D.* **215**, 218

Erratum: Fe II References Catalogues (Ser. 77, No. 1, 155)

*Viotti, R., Baratta, G.B.* **217**, 394; **77**, 155

Erratum: Spots on T Tauri stars

*Bowier, J., Bertout, C.* **218**, 337

Erratum: Simulated annealing image reconstruction in photon-limited stellar speckle interferometry

*Navarro, R., Fuentes, F.J., Nieto-Vesperinas, M.* **219**, 362

Erratum et addendum: Catalogue of Ap and Am stars in open clusters

*Renson, P.* **219**, 366; **78**, 533

Erratum: Stark broadening of He II lines

*Schöning, T., Butler, K.* **220**, 344; **79**, 153

Erratum: A catalogue of Jovian decametric radio observations from January 1982 to December 1984

*Leblanc, Y., Gerbault, A., Lecacheux, A.* **220**, 344; **79**, 154

Erratum: CN-shell structures and dynamics of the nucleus of comet P/Halley

*Schulz, R., Schlosser, W.* **222**, 367

Erratum: Spectroscopy of poorly known northern dwarf novae. Part I

*Bruch, A.* **223**, 380; **79**, 451

Erratum: Star counts and IRAS sources in southern dark clouds

*Gregorio Hetem, J.C., Sanzovo, G.C., Lépine, J.R.D.* **223**, 380; **79**, 452

Erratum: Chemical and photometric properties of a galactic wind model for elliptical galaxies

*Arimoto, N., Yoshii, Y.* **224**, 361

**Erratum:** Spheroidal systems as a one-parameter family of mass at their birth

Yoshii, Y., Arimoto, N. **224**, 361

### Fundamental stars and other objects

A compilation catalogue of positions of extragalactic radio sources

Walter, H.G. **210**, 455

Long-term optical colour and spectral index variability of OJ 287

Takalo, L.O., Sillanpää, A. **218**, 45

Optical positions of radiostars. I

Costa, E., Loyola, P. **218**, 340; **78**, 141

A celestial reference frame based on extragalactic radio sources

Walter, H.G. **223**, 376; **79**, 283

A catalog of stellar spectrophotometry

Adelman, S.J., Pyper, D.M., Shore, S.N., White, R.E., Warren, Jr., W.H. **226**, 418; **81**, 221

Results of observations made in Paris with the astrolabe in 1988

Chollet, F., Baudu, J.P., Débarbat, S., Golbasi, O., Lam, S.K., Texier, P. **226**, 418; **81**, 285

**Galaxies: active;** see also Galaxies, Seyfert; Galaxies: nuclei of; Quasars

Cross-like radio structure in NGC 6500: Evidence for bipolar outflow?

Unger, S.W., Pedlar, A., Hummel, E. **208**, 14

A jet-like optical continuum filament in the active galaxy NGC 1275 (Perseus A)

Meaburn, J., Allan, P.M., Clayton, C.A., Marston, A.P., Whitehead, M.J., Pedlar, A. **208**, 17

The evolution of the Eddington ratio for active galactic nuclei

Padovani, P. **209**, 27

Tidally-detonated nuclear reactions in main sequence stars passing near a large black hole

Luminet, J.-P., Pichon, B. **209**, 85

Raman scattering as a diagnostic possibility in astrophysics

Nussbaumer, H., Schmid, H.M., Vogel, M. **211**, L27

Linearly polarized radioemission from the anomalous arms in NGC 4258 (M 106)

Hummel, E., Krause, M., Lesch, H. **211**, 266

The extended emission line region of the active galaxy PKS 0521-36

Boisson, C., Cayatte, V., Sol, H. **211**, 275

Broad emission line profiles in Seyfert-1 galaxies: [O III]-wings from a transition zone

van Groningen, E., de Bruyn, A.G. **211**, 293

Emission line variation in the Seyfert galaxy Fairall 9 and the presence of broad [O III] emission

Stirpe, G.M., van Groningen, E., de Bruyn, A.G. **211**, 310

A search for electron-scattered wings in H $\alpha$  in Seyfert-1 galaxies

van Groningen, E., van Weeren, N. **211**, 318

Detection of CO(1 $\rightarrow$ 0) emission from infrared quasars and luminous Seyfert galaxies

Sanders, D.B., Scoville, N.Z., Zensus, A., Soifer, B.T., Wilson, T.L., Zylka, R., Steppe, H. **213**, L5

The group environment of Seyfert galaxies. II. Spectrophotometry of galaxies in groups

Fricke, K.J., Kollatschny, W. **213**, 521; **77**, 75

The influence of relativistic kinematics on the asymmetry of spectral line profiles and the observed asymmetries in AGN's

Mediavilla, E., Insertis, F.M. **214**, 79

Composite models for the narrow emission-line region of active galactic nuclei. VI. The Fe lines

Viegas-Aldrovandi, S.M., Contini, M. **215**, 253

IRAS 09149-6206, a new Seyfert I galaxy

Pérez, E., Manchado, A., Pottasch, S.R., García-Lario, P. **215**, 262

The submillimeter continuum of active galaxies

Chini, R., Krügel, E., Kreysa, E., Gemünd, H.-P. **216**, L5

A model for a non-Keplerian magnetic accretion disk with a magnetically heated corona

Heyvaerts, J.F., Priest, E.R. **216**, 230

Isophote shapes of elliptical galaxies. II. Correlations with global optical, radio and X-ray properties

Bender, R., Surma, P., Döbereiner, S., Möllenhoff, C., Madejsky, R. **217**, 35

The preponderance of bar and ring features in starburst galaxies and active galactic nuclei

Arsenault, R. **217**, 66

Supernovae in Markarian galaxies

Turatto, M., Cappellaro, E., Petrosian, A.R. **217**, 79

CO J=2 $\rightarrow$ 1 core mapping of the star-burst galaxy M 82

Phillips, J.P., Mampaso, A. **218**, 24

The group environment of Seyfert galaxies. I

Kollatschny, W., Fricke, K.J. **219**, 34

A comparative study of the discrete and cross correlation techniques: an application to the NGC 5548 IUE light-curve

Rodríguez-Pascual, P.M., Santos-Lleó, M., Clavel, J. **219**, 101

Photomeson production in active galactic nuclei

Mannheim, K., Biermann, P.L. **221**, 211

Hierarchical pairs and the evolution of elliptical galaxies

Prugniel, P., Davoust, E., Nieto, J.-L. **222**, 5

3C 120: study of continuum-emitting condensations close to the nucleus

Soubeyran, A., Wlérick, G., Bijaoui, A., Lelièvre, G., Bouchet, P., Horville, D., Renard, L., Servan, B. **222**, 27

ESO 341-IG04, an elliptical galaxy in the making

Bergvall, N., Rönback, J., Johansson, L. **222**, 49

Electron-ion coupling in Compton-heated plasmas

Schmutzler, T., Lesch, H. **223**, 71

Search for H $\alpha$  emission line galaxies

Rego, M., Zamorano, J., González-Riestra, R. **223**, 380; **79**, 443

Active galactic nuclei and the spectrum of the X-ray background

Setti, G., Woltjer, L. **224**, L21

Distribution of gas and star-forming regions in M 171: Three galaxies?

Casoli, F., Combes, F., Augarde, R., Figon, P., Martin, J.M. **224**, 31

A model for the far-IR emission of non-Seyfert Markarian galaxies

Xu, C., De Zotti, G. **225**, 12

An off-centre NLR with exceptionally broad lines

Wagner, S.J., Appenzeller, I. **225**, L13

Optical depth of molecular gas in starburst galaxies: Is M 82 the prototype?

Verter, F., Rickard, L.J. **225**, 27

The stellar-free emission component in galactic nuclei: at low-levels, evidence for shock ionization

Bonatto, C., Bica, E., Alloin, D. **226**, 23

A catalogue of extended ionized nebulosities around active galactic nuclei

*Durret, F.* **226**, 418; **81**, 253

#### **Galaxies: barred**

Asymmetrical barred galaxies

*Colin, J., Athanassoula, E.* **214**, 99

The preponderance of bar and ring features in starburst galaxies and active galactic nuclei

*Arsenault, R.* **217**, 66

**Galaxies: clusters of**, see Clusters: of galaxies

#### **Galaxies: compact**

Observed and synthesized populations of Wolf-Rayet stars: their evolution and the influence of metallicity

*Arnault, Ph., Kunth, D., Schild, H.* **224**, 73

#### **Galaxies: coroneae of**

Isophote shapes of elliptical galaxies. II. Correlations with global optical, radio and X-ray properties

*Bender, R., Surma, P., Döbereiner, S., Möllenhoff, C., Madejsky, R.* **217**, 35

Time-dependent corona models: scaling laws

*Korevaar, P., Martens, P.C.H.* **226**, 203

#### **Galaxies: dwarf elliptical**

*Erratum:* Spheroidal systems as a one-parameter family of mass at their birth

*Yoshii, Y., Arimoto, N.* **224**, 361

*Erratum:* Chemical and photometric properties of a galactic wind model for elliptical galaxies

*Arimoto, N., Yoshii, Y.* **224**, 361

#### **Galaxies: elliptical**

Extended X-ray emission from hot gas around the normal giant elliptical galaxy NGC 5846

*Biermann, P.L., Kronberg, P.P., Schmutzler, T.* **208**, 22

Equilibrium figures of anisotropic heterogeneous S-type Riemann ellipsoids

*Pacheco, F., Pucacco, G., Ruffini, R., Sebastiani, G.* **210**, 42

The near-infrared NaI doublet in giant elliptical galaxies

*Zhou Xu, Véron-Cetty, M.-P., Véron, P.* **211**, L12

Evidence for gas around two radio galaxies at the Coma cluster periphery

*Venturi, T., Feretti, L., Giovannini, G.* **213**, 49

Anisotropic and inhomogeneous tensor virial models for elliptical galaxies with figure rotation and internal streaming

*Busarello, G., Filippi, S., Ruffini, R.* **213**, 80

The peculiar kinematics of the elliptical dust-lane galaxy NGC 4589

*Möllenhoff, C., Bender, R.* **214**, 61

Boxiness in elliptical galaxies

*Nieto, J.-L., Bender, R.* **215**, 266

A search for Lyman- $\alpha$  emitting objects in a structure between a quasar pair at a redshift of 2

*Rhee, G.F.R.N., Webb, J.K., Katgert, P.* **217**, 1

Isophote shapes of elliptical galaxies. II. Correlations with global optical, radio and X-ray properties

*Bender, R., Surma, P., Döbereiner, S., Möllenhoff, C., Madejsky, R.* **217**, 35

Simulated aperture-photometry on CCD-frames for 67 Southern Galaxies in B and R

*Peletier, R.F., Lauberts, A., Valentijn, E.A.* **217**, 391; **77**, 339

Hierarchical pairs and the evolution of elliptical galaxies

*Prugniel, P., Davoust, E., Nieto, J.-L.* **222**, 5

ESO 341-IG04, an elliptical galaxy in the making

*Bergvall, N., Rönnback, J., Johansson, L.* **222**, 49

Isophotal twisting in isolated elliptical galaxies

*Fasano, G., Bonoli, C.* **223**, 377; **79**, 291

*Erratum:* Spheroidal systems as a one-parameter family of mass at their birth

*Yoshii, Y., Arimoto, N.* **224**, 361

*Erratum:* Chemical and photometric properties of a galactic wind model for elliptical galaxies

*Arimoto, N., Yoshii, Y.* **224**, 361

The molecular cloud content of early type galaxies. I. Detections and global properties

*Wiklund, T., Henkel, C.* **225**, 1

A correlation between shape and (UV-V) color for early-type galaxies

*Longo, G., Capaccioli, M., Bender, R., Busarello, G.* **225**, L17

High resolution observations of the narrow angle tail radio galaxy in Abell 115

*Gregorini, L., Bondi, M.* **225**, 333

Time-dependent corona models: scaling laws

*Korevaar, P., Martens, P.C.H.* **226**, 203

#### **Galaxies: evolution of**

Liouville's equation. I. Symmetries and classification of modes

*Sobouti, Y.* **210**, 18

Liouville's equation. II. Eigenmodes of harmonic potentials

*Sobouti, Y.* **214**, 83

Liouville's equation. III. Symmetries of the linearized equation

*Sobouti, Y., Samimi, J.* **214**, 92

Asymmetrical barred galaxies

*Colin, J., Athanassoula, E.* **214**, 99

Metallicity-dependence of radiative cooling in optically thin, hot plasmas

*Böhringer, H., Hensler, G.* **215**, 147

Hydrodynamics of the interstellar gas in colliding galaxies. II. Non-central collisions

*Müller, E., Mair, G., Hillebrandt, W.* **216**, 19

How to determine a Tolman-Bondi universe from ideal observable and theoretical relations

*Rindler, W., Suson, D.* **218**, 15

A model of spiral-galaxy evolution. II. Toward an understanding of the Hubble sequence

*Galli, D., Ferrini, F.* **218**, 31

Chemical evolution of the Magellanic Clouds. III. Oxygen and carbon abundances in a few F supergiants of the Small Cloud

*Spite, M., Barbuy, B., Spite, F.* **222**, 35

Detection of distant galaxy clusters

*Capri, A., Chincarini, G., Conconi, P., Vettolani, G.* **223**, 1

Acquisition of angular momentum by tidal torques in expanding, spherical-symmetric density perturbations: an analysis of different approximations

*Caimmi, R.* **223**, 29

Star formation rate and gas surface density in late-type galaxies

*Buat, V., Deharveng, J.M., Donas, J.* **223**, 42

Chemical evolution of high redshift galaxies

*Fritze-v.-Alvensleben, U., Krüger, H., Fricke, K.J., Loose, H.-H.* **224**, L1

Distribution of gas and star-forming regions in Mk 171: Three galaxies?

*Casoli, F., Combes, F., Augarde, R., Figon, P., Martin, J.M.* **224**, 31



**Erratum:** Spheroidal systems as a one-parameter family of mass at their birth

Yoshii, Y., Arimoto, N. **224**, 361

**Erratum:** Chemical and photometric properties of a galactic wind model for elliptical galaxies

Arimoto, N., Yoshii, Y. **224**, 361

Spectral evolutionary synthesis models of metal-poor star forming regions

Olofsson, K. **224**, 366; **80**, 317

The detailed velocity field of the ionized gas in the interacting pair of galaxies NGC 2535-36

Amram, P., Marcelin, M., Boulesteix, J., Le Coarer, E. **226**, 415; **81**, 59

### Galaxies: formation of

Gauge-invariant cosmological perturbation theory for collisionless matter: numerical results

Durrer, R. **208**, 1

The two-point correlation functions of galaxies with different luminosities

Börner, G., Deng, Z.-G., Xia, X.-Y. **209**, 1

Galaxy density in biased theories of galaxy origin

Borgani, S., Bonometto, S.A. **215**, 17

Boxiness in elliptical galaxies

Nieto, J.-L., Bender, R. **215**, 266

A search for Lyman- $\alpha$  emitting objects in a structure between a quasar pair at a redshift of 2

Rhee, G.F.R.N., Webb, J.K., Katgert, P. **217**, 1

Simulations of galaxy formation in tidal fields

Voglis, N., Hioteis, N. **218**, 1

The fractal dimension in the large-scale distribution of galaxies with different luminosities

Wen, Z., Deng, Z.-G., Liu, Y.-Z., Xia, X.-Y. **219**, 1

A scenario for the formation of astronomical objects from superstrings

Brosche, P., Tassie, L.J. **219**, 13

ESO 341-IG04, an elliptical galaxy in the making

Bergvall, N., Rönnback, J., Johansson, L. **222**, 49

A class of solutions in Newtonian cosmology and the pancake theory

Buchert, T. **223**, 9

Geometrical analysis of galaxy clustering: dependence on luminosity

Börner, G., Houjun Mo **223**, 25

Acquisition of angular momentum by tidal torques in expanding, spherical-symmetric density perturbations: an analysis of different approximations

Caimmi, R. **223**, 29

**Erratum:** Chemical and photometric properties of a galactic wind model for elliptical galaxies

Arimoto, N., Yoshii, Y. **224**, 361

**Erratum:** Spheroidal systems as a one-parameter family of mass at their birth

Yoshii, Y., Arimoto, N. **224**, 361

### Galaxies: general

The two-point correlation functions of galaxies with different luminosities

Börner, G., Deng, Z.-G., Xia, X.-Y. **209**, 1

H I observations of galaxies in the Virgo cluster of galaxies. II. Global parameters of the galaxies

Huchtmeier, W.K., Richter, O.-G. **210**, 1

Concerning the preferred surface density of giant molecular clouds in the Galaxy

Milgrom, M. **211**, 37

The statistical properties of gravitational lenses of galaxies and quasars

Xiangping Wu **214**, 43

Asymmetrical barred galaxies

Colin, J., Athanassoula, E. **214**, 99

**Erratum:** The H I-properties of bright southern galaxies

Becker, R., Mebold, U., Reif, K., van Woerden, H. **214**, 402

Construction of an inertial coordinate system using a CCD

Mao Wei, Wu Guangjie, Guo Xinjian, Xu Shui, Lu Ruwei **215**, 190

IRAS 09149-6206, a new Seyfert I galaxy

Pérez, E., Manchado, A., Pottasch, S.R., García-Lario, P. **215**, 262

The Hydra I cluster of galaxies. V. A catalogue of galaxies in the cluster area

Richter, O.-G. **215**, 410; **77**, 237

A search for Lyman- $\alpha$  emitting objects in a structure between a quasar pair at a redshift of 2

Rhee, G.F.R.N., Webb, J.K., Katgert, P. **217**, 1

Simulated aperture-photometry on CCD-frames for 67 Southern Galaxies in B and R

Peletier, R.F., Lauberts, A., Valentijn, E.A. **217**, 391; **77**, 339

CO J=2 $\rightarrow$ 1 core mapping of the star-burst galaxy M82

Phillips, J.P., Mampaso, A. **218**, 24

A model of spiral-galaxy evolution. II. Toward an understanding of the Hubble sequence

Galli, D., Ferrini, F. **218**, 31

Large-scale properties of interstellar dust and gas in M33

Deul, E.R. **218**, 78

A wide angle redshift survey of the Hydra-Centaurus region

Fairall, A.P., Vettolani, G., Chincarini, G. **218**, 343; **78**, 269

Scale-invariant matter distribution in the universe. I. Counts in cells

Balian, R., Schaeffer, R. **220**, 1

Large-scale aspects of current star formation in the disk of Messier 81

Buat, V. **220**, 49

Dense molecular gas in galaxies: HCN, HCO<sup>+</sup>, and CS in M82 and NGC 253

Nguyen-Q-Rieu, Nakai, N., Jackson, J.M. **220**, 57

The number excess of galaxies around high redshift quasars

Schneider, P. **221**, 221

The stellar velocity dispersion of the spiral galaxies NGC 6503 and NGC 6340

Bottema, R. **221**, 236

Star formation rate and gas surface density in late-type galaxies

Buat, V., Deharveng, J.M., Donas, J. **223**, 42

Galactic models with massive corona. I. Method

Einasto, J., Haud, U. **223**, 89

Early-type galaxies with dust lanes: observations of a northern sample

Gregorini, L., Messina, A., Vettolani, G. **224**, 363; **80**, 239

An extragalactic database. I. The catalogue of principal galaxies

Paturel, G., Fouqué, P., Bottinelli, L., Gouguenheim, L. **224**, 366; **80**, 299

A correlation between shape and (UV-V) color for early-type galaxies

Longo, G., Capaccioli, M., Bender, R., Busarello, G. **225**, L17

The intricate kinematics of the Sb spiral galaxy NGC 2613

Bottema, R. **225**, 358

Scale-invariant matter distribution in the universe. II. Bifractal behaviour

*Balian, R., Schaeffer, R.* **226**, 373

The Asiago Supernova Catalogue

*Barbon, R., Cappellaro, E., Turatto, M.* **226**, 421; **81**, 421

### Galaxies: haloes of

Probable additional gravitational images related to the CI 2244-02 arc and *B, V, R* photometry of the cluster core

*Hammer, F., Le Fèvre, O., Jones, J., Rigaut, F., Soucail, G.* **208**, L7

Extended X-ray emission from hot gas around the normal giant elliptical galaxy NGC 5846

*Biermann, P.L., Kronberg, P.P., Schmutzler, T.* **208**, 22

Large-scale behaviour of dust grains in a galactic environment

*Barsella, B., Ferrini, F., Greenberg, J.M., Aiello, S.* **209**, 349

Statistical distributions and gravitational halos

*Membrado, M., Pacheco, A.F., Sañudo, J.* **217**, 92

Systems of selfgravitating classical particles with a cutoff in their distribution function

*Merafina, M., Ruffini, R.* **221**, 4

Giant luminous arcs from lensing: determination of the mass distribution inside distant cluster cores

*Hammer, F., Rigaut, F.* **226**, 45

A search for high-velocity H I in nearby face-on spiral galaxies

*Wakker, B.P., Broeils, A.H., Tilanus, R.P.J., Sancisi, R.* **226**, 57

Radio continuum observations of four edge-on spiral galaxies

*Hummel, E., van der Hulst, J.M.* **226**, 416; **81**, 51

Galaxies: individual; see also Galaxies: Magellanic Clouds

### Cygnus A

230 GHz observations of the radio galaxies Cygnus A and Virgo A

*Salter, C.J., Chini, R., Haslam, C.G.T., Junor, W., Kreysa, E., Mezger, P.G., Spencer, R.E., Wink, J.E., Zylka, R.* **220**, 42

### ESO 341-IG04

ESO 341-IG04, an elliptical galaxy in the making

*Bergvall, N., Rönneback, J., Johansson, L.* **222**, 49

### IC 5063

An off-centre NLR with exceptionally broad lines

*Wagner, S.J., Appenzeller, I.* **225**, L13

### IC 342

Dense gas in nearby galaxies. I. Distribution, kinematics and multilevel studies of CS

*Mauersberger, R., Henkel, C.* **223**, 79

### IRAS 07598+6508

Detection of CO(1→0) emission from infrared quasars and luminous Seyfert galaxies

*Sanders, D.B., Scoville, N.Z., Zensus, A., Soifer, B.T., Wilson, T.L., Zylka, R., Steppe, H.* **213**, L5

### IRAS 0833+652

Abundant molecular gas in the starburst galaxy IRAS 0833+652

*Wiklund, T.* **219**, L11

### IRAS 08572+3915

Detection of CO(1→0) emission from infrared quasars and luminous Seyfert galaxies

*Sanders, D.B., Scoville, N.Z., Zensus, A., Soifer, B.T., Wilson, T.L., Zylka, R., Steppe, H.* **213**, L5

### IRAS 17208-0014

A detailed study of the OH megamaser galaxy IRAS 17208-0014

*Martin, J.M., Bottinelli, L., Dennefeld, M., Gougouenheim, L., Le Squeren, A.M.* **208**, 39

### M 31

Distribution and luminosity function of OB stars in M31

*Berkhuijsen, E.M., Humphreys, R.M.* **214**, 68

CO along the minor axis of M31

*Sandqvist, A., Elfag, T., Lindblad, P.O.* **218**, 39

High-resolution polarization observations of M31. I. Structure of the magnetic field in the southwestern arm

*Beck, R., Loiseau, N., Hummel, E., Berkhuijsen, E.M., Gräve, R., Wielebinski, R.* **222**, 58

### M 33

Large-scale properties of interstellar dust and gas in M33

*Deul, E.R.* **218**, 78

### M 81

Large-scale aspects of current star formation in the disk of Messier 81

*Buat, V.* **220**, 49

### M 82

M82, the Galaxy, and the dependence of cosmic ray energy production on the supernova rate

*Völk, H.J., Klein, U., Wielebinski, R.* **213**, L12

Millimeter continuum observations of the active star-forming core of M82

*Thronson, H.A., Jr., Walker, C.K., Walker, C.E., Maloney, P.* **214**, 29

CO J=2→1 core mapping of the star-burst galaxy M82

*Phillips, J.P., Mampaso, A.* **218**, 24

Dense molecular gas in galaxies: HCN, HCO<sup>+</sup>, and CS in M82 and NGC253

*Nguyen-Q-Rieu, Nakai, N., Jackson, J.M.* **220**, 57

Dense gas in nearby galaxies. I. Distribution, kinematics and multilevel studies of CS

*Mauersberger, R., Henkel, C.* **223**, 79

Optical depth of molecular gas in starburst galaxies: Is M82 the prototype?

*Verter, F., Rickard, L.J.* **225**, 27

### M 87

Optical polarization of the M87 jet

*Fraix-Burnet, D., Le Borgne, J.-F., Nieto, J.-L.* **224**, 17

Two-fluid model of superluminal radio sources: application to cosmology

*Pelletier, G., Roland, J.* **224**, 24

### M 104

Dust grains in M 104: an interpretation of the optical polarization in an external galaxy

*Matsumura, M., Seki, M.* **209**, 8

**Mk 171**

Distribution of gas and star-forming regions in Mk 171: Three galaxies?

*Casoli, F., Combes, F., Augarde, R., Figon, P., Martin, J.M.* **224**, 31

**Mk 463**

Detection of CO(1 $\rightarrow$ 0) emission from infrared quasars and luminous Seyfert galaxies

*Sanders, D.B., Scoville, N.Z., Zensus, A., Soifer, B.T., Wilson, T.L., Zylka, R., Steppe, H.* **213**, L5

**NGC 253**

Dense molecular gas in galaxies: HCN, HCO<sup>+</sup>, and CS in M 82 and NGC 253

*Nguyen-Q-Rieu, Nakai, N., Jackson, J.M.* **220**, 57

Dense gas in nearby galaxies. I. Distribution, kinematics and multilevel studies of CS

*Mauersberger, R., Henkel, C.* **223**, 79

**NGC 1068**

CO observations in NGC 1068: physical conditions of the molecular clouds and star formation

*Planesas, P., Gómez-González, J., Martín-Pintado, J.* **216**, 1

**NGC 1275**

A jet-like optical continuum filament in the active galaxy NGC 1275 (Perseus A)

*Meaburn, J., Allan, P.M., Clayton, C.A., Marston, A.P., Whitehead, M.J., Pedlar, A.* **208**, 17

Two-fluid model of superluminal radio sources: application to cosmology

*Pelletier, G., Roland, J.* **224**, 24

**NGC 2535-36**

The detailed velocity field of the ionized gas in the interacting pair of galaxies NGC 2535-36

*Amram, P., Marcelin, M., Boulesteix, J., Le Coarer, E.* **226**, 415; **81**, 59

**NGC 2613**

The intricate kinematics of the Sb spiral galaxy NGC 2613

*Bottema, R.* **225**, 358

**NGC 3034**

Millimeter continuum observations of the active star-forming core of M 82

*Thronson, H.A., Jr., Walker, C.K., Walker, C.E., Maloney, P.* **214**, 29

**NGC 3198**

H I rotation curves of spiral galaxies. I. NGC 3198

*Begeman, K.G.* **223**, 47

**NGC 3619**

Distribution and motions of atomic hydrogen in lenticular galaxies. VIII. The S0/a galaxies NGC 3619, 3626, and 3900

*van Driel, W., Balkowski, C., van Woerden, H.* **218**, 49

**NGC 3626**

Distribution and motions of atomic hydrogen in lenticular galaxies. VIII. The S0/a galaxies NGC 3619, 3626, and 3900

*van Driel, W., Balkowski, C., van Woerden, H.* **218**, 49

**NGC 3900**

Distribution and motions of atomic hydrogen in lenticular galaxies. VIII. The S0/a galaxies NGC 3619, 3626, and 3900

*van Driel, W., Balkowski, C., van Woerden, H.* **218**, 49

**NGC 3941**

Distribution and motions of atomic hydrogen in lenticular galaxies. IX. NGC 3941 and NGC 4694

*van Driel, W., van Woerden, H.* **225**, 317

**NGC 3992**

Spatial and luminosity distributions of the ionized hydrogen in NGC 3992

*Cepa, J., Beckman, J.E.* **220**, 342; **79**, 41

**NGC 4258**

Linearly polarized radioemission from the anomalous arms in NGC 4258 (M 106)

*Hummel, E., Krause, M., Lesch, H.* **211**, 266

**NGC 4419**

The supernova 1984 A in NGC 4419

*Barbon, R., Iijima, T., Rosino, L.* **220**, 83

**NGC 4594**

Stellar kinematics of bulge, disk and nucleus in NGC 4594

*Wagner, S.J., Dettmar, R.-J., Bender, R.* **215**, 243

**NGC 4694**

Distribution and motions of atomic hydrogen in lenticular galaxies. IX. NGC 3941 and NGC 4694

*van Driel, W., van Woerden, H.* **225**, 317

**NGC 4869**

Multifrequency observations of the tailed radio source NGC 4869 in the Coma cluster

*Dallacasa, D., Feretti, L., Giovannini, G., Venturi, T.* **223**, 379; **79**, 391

**NGC 4945**

Polarized radio emission from NGC 4945

*Harnett, J.I., Haynes, R.F., Klein, U., Wiebeinski, R.* **216**, 39

**NGC 5128**

A study of the interstellar medium in line to NGC 5128 from high resolution observations of the supernova 1986G

*D'Odorico, S., di Serego Alighieri, S., Pettini, M., Magain, P., Nissen, P.E., Panagia, N.* **215**, 21

**NGC 5548**

A comparative study of the discrete and cross correlation techniques: an application to the NGC 5548 IUE light-curve

*Rodríguez-Pascual, P.M., Santos-Lleó, M., Clavel, J.* **219**, 101

Soft and hard X-ray variability from the accretion disk of NGC 5548

*Kaasta, J.S., Barr, P.* **226**, 59

**NGC 6340**

The stellar velocity dispersion of the spiral galaxies NGC 6503 and NGC 6340

*Bottema, R.* **221**, 236

**NGC 6503**

The stellar velocity dispersion of the spiral galaxies NGC 6503 and NGC 6340

*Bottema, R.* **221**, 236

**NGC 6814**

High spectral-resolution CO observations of NGC 6814 and NGC 7793

*Brand, J., Wouterloot, J.G.A., Becker, R., Stirpe, G.M.* **211**, 315

**NGC 6946**

The magnetic field of NGC 6946

*Harnett, J.I., Beck, R., Buczilowski, U.R.* **208**, 32

**NGC 7793**

High spectral-resolution CO observations of NGC 6814 and NGC 7793

*Brand, J., Wouterloot, J.G.A., Becker, R., Stirpe, G.M.* **211**, 315

**PKS 0521-36**

The extended emission line region of the active galaxy PKS 0521-36

*Boisson, C., Cayatte, V., Sol, H.* **211**, 275

**PKS 1343-601**

The optical counterpart of the strong southern radio source PKS 1343-601 (13S6A)

*West, R.M., Tarengi, M.* **223**, 61

**SMC**

The Small Magellanic Cloud observed at 45 MHz

*Alvarez, H., Aparici, J., May, J.* **213**, 13

**Virgo A**

230 GHz observations of the radio galaxies Cygnus A and Virgo A

*Salter, C.J., Chini, R., Haslam, C.G.T., Junor, W., Kreysa, E., Mezger, P.G., Spencer, R.E., Wink, J.E., Zylka, R.* **220**, 42

**3C 120**

3C 120: study of continuum-emitting condensations close to the nucleus

*Soubeyran, A., Wlérick, G., Bijaoui, A., Lelièvre, G., Bouchet, P., Horville, D., Renard, L., Servan, B.* **222**, 27

**3C 66B**

Detection of optical polarization in the 3C 66 B jet

*Fraix-Burnet, D., Nieto, J.-L., Poulain, P.* **221**, L1

**Galaxies: irregular**

Molecular clouds in irregular galaxies. I. An ultramassive complex in NGC 3077?

*Becker, R., Schilke, P., Henkel, C.* **211**, L19

Neutral hydrogen observations of the irregular galaxy IC 10

*Shostak, G.S., Skillman, E.D.* **214**, 33

Spectral evolutionary synthesis models of metal-poor star forming regions

*Olofsson, K.* **224**, 366; **80**, 317

Transverse motion, rotation and velocity dispersions of the Large Magellanic Cloud

*Prévot, L., Rousseau, J., Martin, N.* **225**, 303

**Galaxies: jets of**

Extended X-ray emission from hot gas around the normal giant elliptical galaxy NGC 5846

*Biermann, P.L., Kronberg, P.P., Schmutzler, T.* **208**, 22

Synchrotron emission spectra from shockwaves in active galactic nuclei: an energy and space dependent diffusion coefficient

*Fritz, K.D.* **214**, 14

The synchrotron spectra of radio hot spots

*Meisenheimer, K., Röser, H.-J., Hiltner, P.R., Yates, M.G., Longair, M.S., Chini, R., Perley, R.A.* **219**, 63

230 GHz observations of the radio galaxies Cygnus A and Virgo A

*Salter, C.J., Chini, R., Haslam, C.G.T., Junor, W., Kreysa, E., Mezger, P.G., Spencer, R.E., Wink, J.E., Zylka, R.* **220**, 42

Detection of optical polarization in the 3C 66 B jet

*Fraix-Burnet, D., Nieto, J.-L., Poulain, P.* **221**, L1

Three dimensional motion of astrophysical jets

*Zaninetti, L.* **221**, 204

3C 120: study of continuum-emitting condensations close to the nucleus

*Soubeyran, A., Wlérick, G., Bijaoui, A., Lelièvre, G., Bouchet, P., Horville, D., Renard, L., Servan, B.* **222**, 27

Electron-ion coupling in Compton-heated plasmas

*Schmutzler, T., Lesch, H.* **223**, 71

Simulations of the flux contours of astrophysical jets

*Zaninetti, L.* **223**, 369

Optical polarization of the M 87 jet

*Fraix-Burnet, D., Le Borgne, J.-F., Nieto, J.-L.* **224**, 17

Collective plasma processes in extragalactic radio sources

*Lesch, H., Appl, S., Camenzind, M.* **225**, 341

**Galaxies: kinematics and dynamics of**

Liouville's equation. I. Symmetries and classification of modes

*Sobouti, Y.* **210**, 18

Equilibrium figures of anisotropic heterogeneous S-type Riemann ellipsoids

*Pacheco, F., Pucacco, G., Ruffini, R., Sebastiani, G.* **210**, 42

Formation of leading spiral arms in retrograde galaxy encounters

*Thomasson, M., Donner, K.J., Sundelius, B., Byrd, G.G., Huang, T.-Y., Valtonen, M.J.* **211**, 25

The Tully-Fisher relation and galaxy mass to light ratios

*Phillipps, S.* **211**, 259

Large angular rotation velocity of the central parts of some spiral galaxies

*Afanasiev, V.L., Sil'chenko, O.K., Zasov, A.V.* **213**, L9

Anisotropic and inhomogeneous tensor virial models for elliptical galaxies with figure rotation and internal streaming

*Busarello, G., Filippi, S., Ruffini, R.* **213**, 80

Neutral hydrogen observations of the irregular galaxy IC 10

*Shostak, G.S., Skillman, E.D.* **214**, 33

The peculiar kinematics of the elliptical dust-lane galaxy NGC 4589

*Möllenhoff, C., Bender, R.* **214**, 61

Liouville's equation. II. Eigenmodes of harmonic potentials

*Sobouti, Y.* **214**, 83

Liouville's equation. III. Symmetries of the linearized equation

*Sobouti, Y., Samimi, J.* **214**, 92

Asymmetrical barred galaxies

*Colin, J., Athanassoula, E.* **214**, 99

Stellar kinematics of bulge, disk and nucleus in NGC 4594

*Wagner, S.J., Dettmar, R.-J., Bender, R.* **215**, 243



- Arp 118, an interacting system with extreme velocity gradients  
*Hippelein, H.H.* **216**, 11
- Distribution and motions of atomic hydrogen in lenticular galaxies. VIII. The S0/a galaxies NGC 3619, 3626, and 3900  
*van Driel, W., Balkowski, C., van Woerden, H.* **218**, 49
- The stellar velocity dispersion of the spiral galaxies NGC 6503 and NGC 6340  
*Bottema, R.* **221**, 236
- Hierarchical pairs and the evolution of elliptical galaxies  
*Prugniel, P., Davoust, E., Nieto, J.-L.* **222**, 5
- H I rotation curves of spiral galaxies. I. NGC 3198  
*Begeman, K.G.* **223**, 47
- Galactic models with massive corona. I. Method  
*Einasto, J., Haud, U.* **223**, 89
- Isophotal twisting in isolated elliptical galaxies  
*Fasano, G., Bonoli, C.* **223**, 377; **79**, 291
- Distribution of gas and star-forming regions in M 171: Three galaxies?  
*Casoli, F., Combes, F., Augarde, R., Figon, P., Martin, J.M.* **224**, 31
- An off-centre NLR with exceptionally broad lines  
*Wagner, S.J., Appenzeller, I.* **225**, L13
- Transverse motion, rotation and velocity dispersions of the Large Magellanic Cloud  
*Prévot, L., Rousseau, J., Martin, N.* **225**, 303
- Distribution and motions of atomic hydrogen in lenticular galaxies. IX. NGC 3941 and NGC 4694  
*van Driel, W., van Woerden, H.* **225**, 317
- The intricate kinematics of the Sb spiral galaxy NGC 2613  
*Bottema, R.* **225**, 358
- The detailed velocity field of the ionized gas in the interacting pair of galaxies NGC 2535-36  
*Amram, P., Marcelin, M., Boulesteix, J., Le Coarer, E.* **226**, 415; **81**, 59
- Galaxies: lenticular**
- Simulated aperture-photometry on CCD-frames for 67 Southern Galaxies in B and R  
*Peletier, R.F., Lauberts, A., Valentijn, E.A.* **217**, 391; **77**, 339
- Distribution and motions of atomic hydrogen in lenticular galaxies. VIII. The S0/a galaxies NGC 3619, 3626, and 3900  
*van Driel, W., Balkowski, C., van Woerden, H.* **218**, 49
- The molecular cloud content of early type galaxies. I. Detections and global properties  
*Wiklund, T., Henkel, C.* **225**, 1
- Distribution and motions of atomic hydrogen in lenticular galaxies. IX. NGC 3941 and NGC 4694  
*van Driel, W., van Woerden, H.* **225**, 317
- Galaxies: Magellanic Clouds**
- Scanning interferometer observations of the SNR N 186 D in the Large Magellanic Cloud  
*Laval, A., Rosado, M., Boulesteix, J., Georgelin, Y.P., Marcelin, M., Monnet, G., Le Coarer, E.* **208**, 230
- Explosive nucleosynthesis in supernova 1978 A  
*Hashimoto, M., Nomoto, K., Shigeyama, T.* **210**, L5
- Chemical evolution of the Magellanic Clouds. I. Metal abundance in three young supergiants of the Small Cloud  
*Spite, F., Spite, M., François, P.* **210**, 25
- An automated search for star clusters in the Magellanic Clouds. I. Description of the technique and application to a 6 square degree field near the bar of the LMC  
*Bhatia, R.K., MacGillivray, H.T.* **211**, 9
- Strömgren photometry of late-type supergiants in the Small Magellanic Cloud  
*Richtler, T.* **211**, 199
- A new radio continuum survey of the Magellanic Clouds at 1.4 GHz. II. The radio morphology, and thermal and nonthermal emission of the LMC  
*Klein, U., Wielebinski, R., Haynes, R.F., Malin, D.F.* **211**, 280
- The Small Magellanic Cloud observed at 45 MHz  
*Alvarez, H., Aparici, J., May, J.* **213**, 13
- The Geneva photometric monitoring of SN 1987 A  
*Burki, G., Cramer, N., Burnet, M., Rufener, F., Pernier, B., Richard, C.* **213**, L26
- Distances and mass distribution of central stars of planetary nebulae  
*Weidemann, V.* **213**, 155
- The galactic foreground reddening of SN 1987 A  
*Gochermann, J., Goudfroot, P., Schmidt-Kaler, Th.* **213**, 333
- The structure of the Small Magellanic Cloud  
*Martin, N., Maurice, E., Lequeux, J.* **215**, 219
- Global photometric observations of 30 H II regions in the Small Magellanic Cloud  
*Copetti, M.V.F., Dottori, H.A.* **215**, 411; **77**, 327
- Observed dynamical parameters of the disk clusters of the Large Magellanic Cloud. II  
*Chrysovergis, M., Kontizas, M., Kontizas, E.* **217**, 392; **77**, 357
- Globular clusters in the Large Magellanic Cloud: CCD photometry of NGC 1866  
*Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S.* **218**, 339; **78**, 89
- Globular clusters in the Large Magellanic Cloud: NGC 1866, a test for convective overshoot  
*Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S.* **219**, 167
- The spectrograms of Sanduleak -69°202, precursor to Supernova 1987A in the Large Magellanic Cloud  
*Walborn, N.R., Prévot, M.-L., Prévot, L., Wamsteker, W., González, R., Gilmozzi, R., Fitzpatrick, E.L.* **219**, 229
- BVR photoelectric photometry of late-type stars and a compilation of other data in the Small Magellanic Cloud  
*Maurice, E., Bouchet, P., Martin, N.* **219**, 365; **78**, 445
- Absolute fluxes for Supernova 1987A. II. Days 51 to 157  
*Hanuschik, R.W., Thimm, G., Seidensticker, K.J.* **220**, 153
- S 18: a new B[e] supergiant in the Small Magellanic Cloud with evidence for an excretion disk  
*Zickgraf, F.-J., Wolf, B., Stahl, O., Humphreys, R.M.* **220**, 206
- Infrared observations of the Magellanic Clouds. I. The Small Magellanic Cloud  
*Schwering, P.B.W., Israel, F.P.* **220**, 343; **79**, 79
- Infrared observations of the Magellanic Clouds. II. The Large Magellanic Cloud  
*Schwering, P.B.W.* **220**, 343; **79**, 105
- The new long-period Cepheid G 458 = HDE 270100 in the Large Magellanic Cloud  
*van Genderen, A.M., Hadyanto Nitihardjo, G.* **221**, 230
- Chemical evolution of the Magellanic Clouds. III. Oxygen and carbon abundances in a few F supergiants of the Small Cloud  
*Spite, M., Barbuy, B., Spite, F.* **222**, 35
- Two more very massive stars resolved  
*Heydari-Malayeri, M., Magain, P., Remy, M.* **222**, 41
- Rapid changes in the integrated light of young star clusters  
*Arimoto, N., Bica, E.* **222**, 89

- Analysis of the optical light curve of the massive X-ray binary LMC X-4  
*Heemskerk, M.H.M., van Paradijs, J.* **223**, 154
- Emission-line stars in the Magellanic Clouds: infrared spectroscopy of B[e] and Ofpe/WN9 stars  
*McGregor, P.J., Hyland, A.R., McGinn, M.T.* **223**, 237
- Light variations of massive stars ( $\alpha$  Cygni variables). X. The F type supergiants G266 = HDE271182 = R92 and G322 = HDE269612 in the LMC  
*van Genderen, A.M., Hadiyanto Nitihardjo, G.* **223**, 379; **79**, 401
- A bibliography of colour magnitude diagram studies of star clusters in the Magellanic Clouds  
*Sagar, R., Pandey, A.K.* **223**, 379; **79**, 407
- Neutrino emission from type II supernovae: an analysis of the spectra  
*Janka, H.-T., Hillebrandt, W.* **224**, 49
- Spectral evolutionary synthesis models of metal-poor star forming regions  
*Olofsson, K.* **224**, 366; **80**, 317
- Transverse motion, rotation and velocity dispersions of the Large Magellanic Cloud  
*Prévot, L., Rousseau, J., Martin, N.* **225**, 303
- Chemical evolution in the Magellanic Clouds. IV. Metal abundance of a star in the young globular cluster NGC1818 in the Large Magellanic Cloud  
*Richtler, T., Spite, M., Spite, F.* **225**, 351
- The expansive motions around the central hole of the complex giant filamentary shell DEM 34 (N11) in the Large Magellanic Cloud  
*Meaburn, J., Solomos, N., Laspias, V., Goudis, C.* **225**, 497
- Quantitative spectroscopy of O-stars in the Magellanic Clouds. I. The young open cluster NGC 346 in the SMC  
*Kudritzki, R.P., Cabanne, M.L., Husfeld, D., Niemela, V.S., Groth, H.G., Puls, J., Herrero, A.* **226**, 235
- High resolution spectroscopy of near main sequence B stars of blue globular clusters in the Magellanic Clouds  
*Jüttner, A., Reitermann, A., Stahl, O., Wolf, B.* **226**, 415; **81**, 93
- Radial velocities of southern stars obtained with the photoelectric scanner Coravel. VIII. Radial velocity variations of eleven Cepheids in the Large and Small Magellanic Clouds  
*Imbert, M., Andersen, J., Ardeberg, A., Duquenois, A., Lindgren, H., Maurice, E., Mayor, M., Mermilliod, J.C., Nordström, B., Prévot, L.* **226**, 421; **81**, 339
- Near infrared spectra of galactic and Magellanic Wolf-Rayet stars  
*Vreux, J.M., Dennefeld, M., Andrillat, Y., Rochowicz, K.* **226**, 421; **81**, 353
- Galaxies: nuclei of**
- Formation of Ca II lines in active galactic nuclei  
*Joly, M.* **208**, 47
- The stability of isotropic distribution functions of relativistic electrons. II. Oblique propagating Langmuir waves in an electron-proton plasma  
*Lesch, H., Crusius, A., Schlickeiser, R.* **209**, 427
- Constraints on integrated nuclear rotation measures in core-dominated active galactic nuclei  
*O'Dea, C.P.* **210**, 35
- Large angular rotation velocity of the central parts of some spiral galaxies  
*Afanasiev, V.L., Sil'chenko, O.K., Zasov, A.V.* **213**, L9
- Emission spectra of weakly photoionized media in active nuclei of galaxies  
*Collin-Souffrin, S., Dumont, A.M.* **213**, 29
- Neutrons from active galactic nuclei  
*Kirk, J.G., Mastichiadis, A.* **213**, 75
- The group environment of Seyfert galaxies. II. Spectrophotometry of galaxies in groups  
*Fricke, K.J., Kollatschny, W.* **213**, 521; **77**, 75
- The influence of relativistic kinematics on the asymmetry of spectral line profiles and the observed asymmetries in AGN's  
*Mediavilla, E., Insertis, F.M.* **214**, 79
- Stellar kinematics of bulge, disk and nucleus in NGC 4594  
*Wagner, S.J., Dettmar, R.-J., Bender, R.* **215**, 243
- Composite models for the narrow emission-line region of active galactic nuclei. VI. The Fe lines  
*Viegas-Aldrovandi, S.M., Contini, M.* **215**, 253
- A model for a non-Keplerian magnetic accretion disk with a magnetically heated corona  
*Heyvaerts, J.F., Priest, E.R.* **216**, 230
- Photon surfing near compact accreting objects  
*Icke, V.* **216**, 294
- The preponderance of bar and ring features in starburst galaxies and active galactic nuclei  
*Arsenault, R.* **217**, 66
- Ring currents and poloidal magnetic fields in nuclear regions of galaxies  
*Lesch, H., Crusius, A., Schlickeiser, R., Wielebinski, R.* **217**, 99
- The group environment of Seyfert galaxies. I  
*Kollatschny, W., Fricke, K.J.* **219**, 34
- Active galactic nuclei as accreting turbulent synchrotron-self-Compton sources  
*Atoyan, A.M., Nahapetian, A.* **219**, 53
- The nature of radio-quiet quasars  
*Chini, R., Kreysa, E., Biermann, P.L.* **219**, 87
- The 1987 outburst of the BL Lacertid AO0235+164  
*Webb, J.R., Smith, A.G.* **220**, 65
- Photomeson production in active galactic nuclei  
*Mannheim, K., Biermann, P.L.* **221**, 211
- Dense gas in nearby galaxies. I. Distribution, kinematics and multilevel studies of CS  
*Mauersberger, R., Henkel, C.* **223**, 79
- An off-centre NLR with exceptionally broad lines  
*Wagner, S.J., Appenzeller, I.* **225**, L13
- Dense gas in nearby galaxies. II. CS emission from spiral galaxies  
*Mauersberger, R., Henkel, C., Wilson, T.L., Harju, J.* **226**, L5
- The stellar-free emission component in galactic nuclei: at low-levels, evidence for shock ionization  
*Bonatto, C., Bica, E., Alloin, D.* **226**, 23
- A catalogue of extended ionized nebulosities around active galactic nuclei  
*Durret, F.* **226**, 418; **81**, 253
- Galaxies: radio**
- Radio continuum emission and arm classification in spiral galaxies  
*Giuricin, G., Mardirossian, F., Mezzetti, M.* **208**, 27
- Determination of the level of the MHD turbulence in 4C 21.44  
*Roland, J., Rhee, G.F.R.N.* **213**, 10
- Evidence for gas around two radio galaxies at the Coma cluster periphery  
*Venturi, T., Feretti, L., Giovannini, G.* **213**, 49

## Three prototype compact steep spectrum radio sources

*Fanti, C., Fanti, R., Parma, P., Venturi, T., Schilizzi, R.T., Nan Rendong, Spencer, R.E., Muxlow, T.W.B., van Breugel, W.* **217, 44**

## The synchrotron spectra of radio hot spots

*Meisenheimer, K., Röser, H.-J., Hiltner, P.R., Yates, M.G., Longair, M.S., Chini, R., Perley, R.A.* **219, 63**

## The nature of radio-quiet quasars

*Chini, R., Kreysa, E., Biermann, P.L.* **219, 87**

## Large-scale anisotropy in the sky distribution of extragalactic radio sources

*Shaver, P.A., Pierre, M.* **220, 35**

## 230 GHz observations of the radio galaxies Cygnus A and Virgo A

*Salter, C.J., Chini, R., Haslam, C.G.T., Junor, W., Kreysa, E., Mezger, P.G., Spencer, R.E., Wink, J.E., Zylka, R.* **220, 42**

## Detection of optical polarization in the 3C 66 B jet

*Fraix-Burnet, D., Nieto, J.-L., Poulain, P.* **221, L1**

870 and 1300  $\mu$ m observations of radio quasars

*Chini, R., Biermann, P.L., Kreysa, E., Gemünd, H.-P.* **221, L3**

## Synchrotron-cooling-included fine structure in extragalactic radio sources

*Achterberg, A.* **221, 364**

## 3C 120: study of continuum-emitting condensations close to the nucleus

*Soubeyran, A., Wlérick, G., Bijaoui, A., Lelièvre, G., Bouchet, P., Horville, D., Renard, L., Servan, B.* **222, 27**

## The optical counterpart of the strong southern radio source PKS 1343-601 (13S6A)

*West, R.M., Tarengi, M.* **223, 61**

## The nature of the central source of the supernova remnant G 179.0+2.7

*Fürst, E., Reich, W., Kühn, H., Stickel, M.* **223, 66**

## Multifrequency observations of the tailed radio source NGC 4869 in the Coma cluster

*Dallacasa, D., Feretti, L., Giovannini, G., Venturi, T.* **223, 379; 79, 391**

## Two-fluid model of superluminal radio sources: application to cosmology

*Pelletier, G., Roland, J.* **224, 24**

## Early-type galaxies with dust lanes: observations of a northern sample

*Gregorini, L., Messina, A., Vettolani, G.* **224, 363; 80, 239**

## High resolution observations of the narrow angle tail radio galaxy in Abell 115

*Gregorini, L., Bondi, M.* **225, 333**

## Collective plasma processes in extragalactic radio sources

*Lesch, H., Appl, S., Camenzind, M.* **225, 341**

## 0309+411, an Mpc-sized core-dominated radio galaxy/quasar

*de Bruyn, A.G.* **226, L13**

## Galaxies: redshifts of

## Radial velocities of 13 southern rich clusters

*Vettolani, G., Cappi, A., Chincarini, G., Focardi, P., Garilli, B., Gregorini, L., Maccagni, D.* **220, 344; 79, 147**

## Correlation functions of galaxies with different weightings according to luminosity and mass

*Börner, G., Houjun Mo, Youyuan Zhou* **221, 191**

## The existence of very large-scale structures in the universe

*Goicoechea, L.J., Martin-Mirones, J.M.* **221, 197**

## The optical counterpart of the strong southern radio source PKS 1343-601 (13S6A)

*West, R.M., Tarengi, M.* **223, 61**

## Galaxies: Seyfert

## The extended emission line region of the active galaxy PKS 0521-36

*Boisson, C., Cayatte, V., Sol, H.* **211, 275**

## Broad emission line profiles in Seyfert-1 galaxies: [O III]-wings from a transition zone

*van Groningen, E., de Bruyn, A.G.* **211, 293**

## Emission line variation in the Seyfert galaxy Fairall 9 and the presence of broad [O III] emission

*Stirpe, G.M., van Groningen, E., de Bruyn, A.G.* **211, 310**

## High spectral-resolution CO observations of NGC 6814 and NGC 7793

*Brand, J., Wouterloot, J.G.A., Becker, R., Stirpe, G.M.* **211, 315**

A search for electron-scattered wings in H $\alpha$  in Seyfert-1 galaxies

*van Groningen, E., van Weeren, N.* **211, 318**

## The high excitation extended gas in NGC 1068: a probe to the central hidden absorbing torus

*Bergeron, J., Petitjean, P., Durret, F.* **213, 61**

## The group environment of Seyfert galaxies. II. Spectrophotometry of galaxies in groups

*Fricke, K.J., Kollatschny, W.* **213, 521; 77, 75**

## IRAS 09149-6206, a new Seyfert I galaxy

*Pérez, E., Manchado, A., Pottasch, S.R., García-Lario, P.* **215, 262**

## Arp 118, an interacting system with extreme velocity gradients

*Hipplein, H.H.* **216, 11**

## The group environment of Seyfert galaxies. I

*Kollatschny, W., Fricke, K.J.* **219, 34**

## The nature of radio-quiet quasars

*Chini, R., Kreysa, E., Biermann, P.L.* **219, 87**

Intermediate resolution spectra of quasars with  $z > 2$ 

*Ulrich, M.-H.* **220, 71**

## Soft and hard X-ray variability from the accretion disk of NGC 5548

*Kaastra, J.S., Barr, P.* **226, 59**

## A catalogue of extended ionized nebulosities around active galactic nuclei

*Durret, F.* **226, 418; 81, 253**

## Galaxies: spiral

## Radio continuum emission and arm classification in spiral galaxies

*Giuricin, G., Madirossian, F., Mezzetti, M.* **208, 27**

## The magnetic field of NGC 6946

*Harnett, J.J., Beck, R., Buczyłowski, U.R.* **208, 32**

## Large-scale behaviour of dust grains in a galactic environment

*Barsella, B., Ferrini, F., Greenberg, J.M., Aiello, S.* **209, 349**

## Formation of leading spiral arms in retrograde galaxy encounters

*Thomasson, M., Donner, K.J., Sundelius, B., Byrd, G.G., Huang, T.-Y., Valtonen, M.J.* **211, 25**

## The Tully-Fisher relation and galaxy mass to light ratios

*Phillipps, S.* **211, 259**

## Linearly polarized radioemission from the anomalous arms in NGC 4258 (M 106)

*Hummel, E., Krause, M., Lesch, H.* **211, 266**

## M 82, the Galaxy, and the dependence of cosmic ray energy production on the supernova rate

*Völk, H.J., Klein, U., Wiełbinski, R.* **213, L12**

- Configuration of large-scale magnetic fields in spiral galaxies  
*Krasheninnikova (Baryshnikova), Ruzmaikin, A., Sokoloff, D., Shukurov, A.* **213**, 19
- Observable parameters of spiral galaxies and galactic magnetic fields  
*Starchenko, S.V., Shukurov, A.M.* **214**, 47
- Distribution and luminosity function of OB stars in M31  
*Berkhuijsen, E.M., Humphreys, R.M.* **214**, 68
- Stellar kinematics of bulge, disk and nucleus in NGC 4594  
*Wagner, S.J., Dettmar, R.-J., Bender, R.* **215**, 243
- CO observations in NGC 1068: physical conditions of the molecular clouds and star formation  
*Planesas, P., Gómez-González, J., Martín-Pintado, J.* **216**, 1
- Polarized radio emission from NGC 4945  
*Harnett, J.J., Haynes, R.F., Klein, U., Wielebinski, R.* **216**, 39
- The magnetic field structures in two nearby spiral galaxies. I. The axisymmetric spiral magnetic field in IC 342  
*Krause, M., Hummel, E., Beck, R.* **217**, 4
- The magnetic field structures in two nearby spiral galaxies. II. The bisymmetric spiral magnetic field in M81  
*Krause, M., Beck, R., Hummel, E.* **217**, 17
- The preponderance of bar and ring features in starburst galaxies and active galactic nuclei  
*Arsenault, R.* **217**, 66
- Empirical amplitude-luminosity relation of S Doradus variables and extragalactic distances  
*Wolf, B.* **217**, 87
- A model of spiral-galaxy evolution. II. Toward an understanding of the Hubble sequence  
*Galli, D., Ferrini, F.* **218**, 31
- CO along the minor axis of M31  
*Sandqvist, A., Elfhag, T., Lindblad, P.O.* **218**, 39
- The correlation between radio and far-infrared emission for disk galaxies: a calorimeter theory  
*Völk, H.J.* **218**, 67
- Spatial and luminosity distributions of the ionized hydrogen in NGC 3992  
*Cepa, J., Beckman, J.E.* **220**, 342; **79**, 41
- High-resolution polarization observations of M31. I. Structure of the magnetic field in the southwestern arm  
*Beck, R., Loiseau, N., Hummel, E., Berkhuijsen, E.M., Gräve, R., Wielebinski, R.* **222**, 58
- A search for high-velocity H I in nearby face-on spiral galaxies  
*Wakker, B.P., Broeils, A.H., Tilanus, R.P.J., Sancisi, R.* **226**, 57
- The detailed velocity field of the ionized gas in the interacting pair of galaxies NGC 2535-36  
*Amram, P., Marcelin, M., Boulesteix, J., Le Coarer, E.* **226**, 415; **81**, 59
- Radio continuum observations of four edge-on spiral galaxies  
*Hummel, E., van der Hulst, J.M.* **226**, 416; **81**, 51
- Galaxies: stellar content of**
- The near-infrared Na I doublet in giant elliptical galaxies  
*Zhou Xu, Véron-Cetty, M.-P., Véron, P.* **211**, L12
- Gravitational micro-lensing due to an ensemble of compact objects with different masses  
*Kayser, R., Weiss, A., Refsdal, S., Schneider, P.* **214**, 4
- A comparative study of Na I and Ca II infrared lines in stars, star clusters and galaxy nuclei: an alternative to the dwarf-enriched population  
*Allain, D., Bica, E.* **217**, 57
- Supernovae in Markarian galaxies  
*Turatto, M., Cappellaro, E., Petrosian, A.R.* **217**, 79
- ESO 341-IG04, an elliptical galaxy in the making  
*Bergvall, N., Rönneback, J., Johansson, L.* **222**, 49
- Star formation rate and gas surface density in late-type galaxies  
*Buat, V., Deharveng, J.M., Donas, J.* **223**, 42
- Observed and synthesized populations of Wolf-Rayet stars: their evolution and the influence of metallicity  
*Arnault, Ph., Kunth, D., Schild, H.* **224**, 73
- Spectral evolutionary synthesis models of metal-poor star forming regions  
*Olofsson, K.* **224**, 366; **80**, 317
- The stellar-free emission component in galactic nuclei: at low-levels, evidence for shock ionization  
*Bonatto, C., Bica, E., Alloin, D.* **226**, 23
- Galaxies: structure of**
- Radio continuum emission and arm classification in spiral galaxies  
*Giuricin, G., Mardirossian, F., Mezzetti, M.* **208**, 27
- Large-scale behaviour of dust grains in a galactic environment  
*Barsella, B., Ferrini, F., Greenberg, J.M., Aiello, S.* **209**, 349
- Equilibrium figures of anisotropic heterogeneous S-type Riemann ellipsoids  
*Pacheco, F., Pucacco, G., Ruffini, R., Sebastiani, G.* **210**, 42
- Formation of leading spiral arms in retrograde galaxy encounters  
*Thomasson, M., Donner, K.J., Sundelius, B., Byrd, G.G., Huang, T.-Y., Valtonen, M.J.* **211**, 25
- A new radio continuum survey of the Magellanic Clouds at 1.4 GHz. II. The radio morphology, and thermal and nonthermal emission of the LMC  
*Klein, U., Wielebinski, R., Haynes, R.F., Malin, D.F.* **211**, 280
- Large angular rotation velocity of the central parts of some spiral galaxies  
*Afanasiev, V.L., Sil'chenko, O.K., Zasov, A.V.* **213**, L9
- The Small Magellanic Cloud observed at 45 MHz  
*Alvarez, H., Aparici, J., May, J.* **213**, 13
- Anisotropic and inhomogeneous tensor virial models for elliptical galaxies with figure rotation and internal streaming  
*Busarello, G., Filippi, S., Ruffini, R.* **213**, 80
- The peculiar kinematics of the elliptical dust-lane galaxy NGC 4589  
*Möllenhoff, C., Bender, R.* **214**, 61
- Asymmetrical barred galaxies  
*Colin, J., Athanassoula, E.* **214**, 99
- Stellar kinematics of bulge, disk and nucleus in NGC 4594  
*Wagner, S.J., Dettmar, R.-J., Bender, R.* **215**, 243
- Boxiness in elliptical galaxies  
*Nieto, J.-L., Bender, R.* **215**, 266
- CO observations in NGC 1068: physical conditions of the molecular clouds and star formation  
*Planesas, P., Gómez-González, J., Martín-Pintado, J.* **216**, 1
- Isophote shapes of elliptical galaxies. II. Correlations with global optical, radio and X-ray properties  
*Bender, R., Surma, P., Döbereiner, S., Möllenhoff, C., Madejsky, R.* **217**, 35
- CO J=2→1 core mapping of the star-burst galaxy M82  
*Phillips, J.P., Mampaso, A.* **218**, 24
- Distribution and motions of atomic hydrogen in lenticular galaxies. VIII. The S0/a galaxies NGC 3619, 3626, and 3900  
*van Driel, W., Balkowski, C., van Woerden, H.* **218**, 49



## Large-scale properties of interstellar dust and gas in M33

Deul, E.R. **218**, 78

## The stellar velocity dispersion of the spiral galaxies NGC 6503 and NGC 6340

Bottema, R. **221**, 236

## H I rotation curves of spiral galaxies. I. NGC 3198

Begeman, K.G. **223**, 47

## The intricate kinematics of the Sb spiral galaxy NGC 2613

Bottema, R. **225**, 358

**Galaxy (the): bulge of**

## Low mass planetary nebulae near the galactic centre

Zijlstra, A.A., Pottasch, S.R. **216**, 245

## Evolution of planetary nebulae in the galactic bulge

Pottasch, S.R., Acker, A. **221**, 123

**Galaxy (the): center of**

## Carbon monoxide along the line of sight to galactic center infrared sources

Geballe, T.R., Baas, F., Wade, R. **208**, 255

## Continuum observations of Sgr A at mm/submm wavelengths

Mezger, P.G., Zylka, R., Salter, C.J., Wink, J.E., Chini, R., Kreysa, E., Tuffs, R. **209**, 337

## The distribution and kinematics of the ionized gas in the galactic centre region

Schwarz, U.J., Bregman, J.D., van Gorkom, J.H. **215**, 33

2-mm H<sub>2</sub>CO emission in the Sgr A molecular complex at the Galactic Center

Sandqvist, A. **223**, 293

## Solution topologies for cosmic ray modified galactic winds. I. Spherical symmetry

Zank, G.P. **225**, 37

## Radio continuum observations of the galactic centre at 4.75 and 10.7 GHz

Seiradakis, J.H., Reich, W., Wielebinski, R., Lasenby, A.N., Yusef-Zadeh, F. **226**, 421; **81**, 291

**Galaxy (the): disk of**

## The galactic foreground reddening of SN 1987 A

Gochermann, J., Goudfrooij, P., Schmidt-Kaler, Th. **213**, 333

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities. I

Fenkart, R. **218**, 342; **78**, 217

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities. II (Synopsis of 25 years Basle Halo Program; II: Plaut I, NGC 6171, SA 158, M13)

Fenkart, R. **220**, 342; **79**, 51

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities (Synopsis of 25 years Basle Halo Program. III. [*RGU*+*UBV*]: SA 82, SA 133, SA 57, SA 54)

Fenkart, R. **223**, 382; **80**, 89

**Galaxy (the): evolution of**

## The chemical composition of the extreme halo stars. I. Blue spectra of 20 dwarfs

Magain, P. **209**, 211

## Metal abundances in metal-poor globular clusters

Gratton, R.G., Ortolani, S. **211**, 41

The <sup>12</sup>CH<sup>+</sup>/<sup>13</sup>CH<sup>+</sup> ratio toward ζ Ophiuchi

Stahl, O., Wilson, T.L., Henkel, C., Appenzeller, I. **221**, 321

*uvby-β* photometry of high-velocity and metal-poor stars. III. Metallicities and ages of the halo stars

Schuster, W.J., Nissen, P.E. **222**, 69

## Spectroscopy and deep photometry of Pal 3 and C0422-213

Ortolani, S., Gratton, R.G. **223**, 375; **79**, 155

## White dwarf luminosity functions calculated from models of galactic evolution and the age of the galactic disk

Yuan, J.W. **224**, 108

## Solution topologies for cosmic ray modified galactic winds. I. Spherical symmetry

Zank, G.P. **225**, 37

**Galaxy (the): general**

## Reduction of the Oort limit and the dark matter contribution to it

Boulares, A. **209**, 21

## Concerning the preferred surface density of giant molecular clouds in the Galaxy

Milgrom, M. **211**, 37

## The galactic emission in the 3.3 μm aromatic feature. I. Observations

Giard, M., Pajot, F., Lamarre, J.M., Serra, G., Caux, E. **215**, 92

## The transformation of coordinates between the systems of B1950.0 and J2000.0, and the principal galactic axes referred to J2000.0

Murray, C.A. **218**, 325

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities. I

Fenkart, R. **218**, 342; **78**, 217

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities. II (Synopsis of 25 years Basle Halo Program; II: Plaut I, NGC 6171, SA 158, M13)

Fenkart, R. **220**, 342; **79**, 51

**Galaxy (the): halo of**

## Collision of a high-velocity cloud with a dust cloud in the galactic halo

Rohlf, R., Herbstmeier, U., Mebold, U., Winnberg, A. **211**, 402

## Non-baryonic matter from the halo and the solar neutrino problem

Finzi, A., Harpaz, A. **211**, 441

## Life and death of cosmions in stars

Bouquet, A., Salati, P. **217**, 270

## Orbital elements for double stars of Population II. The double-line high-velocity system HD 113083

Lindgren, H., Ardeberg, A., Zuiderwijk, E. **218**, 111

*uvby-β* photometry of high-velocity and metal-poor stars. III. Metallicities and ages of the halo stars

Schuster, W.J., Nissen, P.E. **222**, 69

## An off-centre NLR with exceptionally broad lines

Wagner, S.J., Appenzeller, I. **225**, L13

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric Space Densities (Synopsis of 25 years Basle Halo Program). IV. SA 107

Fenkart, R. **226**, 418; **81**, 187

**Galaxy (the): kinematics and dynamics of**

## The new binary millisecond pulsar PSR 0021-72A: a laboratory for gravitational physics

Wijers, R.A.M.J. **209**, L1

Reduction of the Oort limit and the dark matter contribution to it

*Boulares, A.* **209**, 21

Galactic rotation curve in the range  $0.4 < R/R_0 < 1$  from neutral hydrogen 21 cm line profiles and the graphic variant of the Agekian et al. method

*Teerikorpi, P.* **209**, 46

The mass density in our Galaxy. II. F dwarfs and K giants as density tracers

*Crézé, M., Robin, A.C., Bienaymé, O.* **211**, 1

Capture of field stars by molecular clouds

*Bhatt, H.C.* **213**, 299

The distribution and kinematics of the ionized gas in the galactic centre region

*Schwarz, U.J., Bregman, J.D., van Gorkom, J.H.* **215**, 33

OB star distances and the rotation curve of the outer Galaxy

*Hron, J.* **222**, 85

Galactic models with massive corona. I. Method

*Einasto, J., Haud, U.* **223**, 89

Galactic models with massive corona. II. Galaxy

*Haud, U., Einasto, J.* **223**, 95

IRAS sources beyond the solar circle. I. CO observations

*Wouterloot, J.G.A., Brand, J.* **224**, 362; **80**, 149

#### Galaxy (the): solar neighbourhood

Reduction of the Oort limit and the dark matter contribution to it

*Boulares, A.* **209**, 21

The Southern Coalsack: extinction and distance

*Franco, G.A.P.* **215**, 119

High latitude molecular clouds: distances derived from accurate photometry

*Franco, G.A.P.* **223**, 313

The distance and structure of the Coalsack. II. Analysis

*Seidensticker, K.J., Schmidt-Kaler, Th.* **225**, 192

[Fe/H], age and distance for the F-stars of an unbiased radial velocity sample at the north galactic pole

*Knude, J.* **226**, 418; **81**, 215

#### Galaxy (the): stellar content of

The mass density in our Galaxy. II. F dwarfs and K giants as density tracers

*Crézé, M., Robin, A.C., Bienaymé, O.* **211**, 1

Oxygen in old and thick disk stars

*Barbuy, B., Erdelyi-Mendes, M.* **214**, 239

Photographic *UBV* photometry to  $V \sim 21$  in the Puppis window

*Cameron Reed, B.* **217**, 393; **77**, 447

Galactic population synthesis: G and K giant calibration

*Robin, A.C.* **225**, 69

#### Galaxy (the): structure of

Abundance of manganese in metal-poor stars

*Gratton, R.G.* **208**, 171

An optical spiral arm beyond the Perseus arm

*Kimeswenger, S., Weinberger, R.* **209**, 51

The mass density in our Galaxy. II. F dwarfs and K giants as density tracers

*Crézé, M., Robin, A.C., Bienaymé, O.* **211**, 1

Metal abundances in metal-poor globular clusters

*Gratton, R.G., Ortolani, S.* **211**, 41

Photometry and spectroscopy of stars in northern H II regions

*Forbes, D.* **217**, 393; **77**, 439

*Erratum:* Walraven *VBLUW* photometry in basel halo fields. I. Photometric data for Selected Areas SA141 (South Galactic Pole), SA94 and SA107

*Pel, J.W., Trefzger, C.F., Blaauw, A.* **217**, 394; **77**, 513

*UBV* photometry of luminous early-type stars and emission-line stars in the Southern Coalsack region

*Westerlund, B.E., Garnier, R.* **218**, 341; **78**, 203

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities. I

*Fenkart, R.* **218**, 342; **78**, 217

Photometric calibration of the APM Proper Motion Project

*Evans, D.W.* **218**, 342; **78**, 249

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities. II (Synopsis of 25 years Basle Halo Program; II: Plaut I, NGC 6171, SA 158, M 13)

*Fenkart, R.* **220**, 342; **79**, 51

OB star distances and the rotation curve of the outer Galaxy

*Hron, J.* **222**, 85

Galactic models with massive corona. I. Method

*Einasto, J., Haud, U.* **223**, 89

Galactic models with massive corona. II. Galaxy

*Haud, U., Einasto, J.* **223**, 95

Observations of the submillimetre integrated galactic emission from the South Pole

*Pajot, F., Gispert, R., Lamarre, J.M., Peyturaux, R., Pomerantz, M.A., Puget, J.L., Serra, G., Mauel, C., Pfeiffer, R., Renault, J.C.* **223**, 107

Spectroscopy and deep photometry of Pal 3 and C0422-213

*Ortolani, S., Gratton, R.G.* **223**, 375; **79**, 155

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities (Synopsis of 25 years Basle Halo Program. III. [*RGU* + *UBV*]: SA 82, SA 133, SA 57, SA 54)

*Fenkart, R.* **223**, 382; **80**, 89

IRAS sources beyond the solar circle. I. CO observations

*Wouterloot, J.G.A., Brand, J.* **224**, 362; **80**, 149

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric Space Densities (Synopsis of 25 years Basle Halo Program). IV. SA 107

*Fenkart, R.* **226**, 418; **81**, 187

#### Gamma rays: bursts

Photoproduction of high-frequency gravitational radiation by galactic and extragalactic sources

*Papini, G., Valluri, S.-R.* **208**, 345

Cygnus X-3 at high energies: a critical analysis of observational results

*Chardin, G., Gerbier, G.* **210**, 52

X-ray emission from  $\gamma$ -ray bursters

*Hameury, J.M., Lasota, J.P.* **211**, L15

The nature of absorption features in the spectra of gamma-ray bursters

*Bisnovatyi-Kogan, G.S., Illarionov, A.F.* **213**, 107

Constraints on the optical counterpart of GBS 0526-66

*Boer, M., Hurley, K., Gottardi, M., Motch, C., Pedersen, H., Simonsen, R.L.* **214**, 148

Implications for the detection of ultra-high-energy gamma rays from Sco X-1

*Mitra, A.K.* **219**, L1

The probability of detecting absorption features in gamma-ray burst spectra

*Melia, F.* **223**, L9

## Possible optical identification of GB 791101

*Moskalenko, E.I., Poprako, G.V., Kramer, E.N., Shestaka, I.S., Karnashov, A.N., Nazarenko, V.V., Skoblikova, L.Ja., Lemeshchenko, V.F., Nazarenko, S.V., Gorbanev, Ju.M.* **223**, 141

## Synchrotron pair cascades in strong magnetic fields

*Baring, M.G.* **225**, 260

Possible optical transient in Triangulum and its relation to the  $\gamma$ -ray burst sources

*Hudec, R., Peresty, R., Meinunger, L., Wenzel, W., Motch, C.* **225**, 411

## Gamma rays: general

## 2CG013: a "monoenergetic" source of cosmic rays?

*Özel, M.E., Ormes, J.F.* **208**, 247

## Search for a 12.59 ms pulsar in Cygnus X-3

*Fegan, D.J., Cawley, M.F., Gibbs, K., Lamb, R.C., Lewis, D.A., Porter, N.A., Reynolds, P.T., Smyth, G., Weekes, T.C.* **211**, L1

## PeV inverse Compton gamma rays from Cygnus X-3

*Schlickeiser, R.* **213**, L23

Implications of the solar flare  $\gamma$ -ray limb-brightening observations for particle acceleration and the flare magnetic environment. I. Approximate, analytical treatment

*MacKinnon, A.L., Brown, J.C.* **215**, 371

## Radiation from young SN II shells produced by cosmic rays accelerated in shock waves

*Berezinsky, V.S., Ptuskin, V.S.* **215**, 399

Radio measurements in the fields of  $\gamma$ -ray sources. III. The star formation region  $\rho$ -Ophiuchi

*Schlickeiser, R., Harwit, M., Özel, M.E., Sieber, W., Younis, S.M., Schinckel, A.* **216**, 197

The synthesis of  $^{26}\text{Al}$  in massive stars

*Walter, R., Maeder, A.* **218**, 123

## Detection of weak signals in TeV gamma-ray astronomy: dc excess vs. periodic amplitude

*Lewis, D.A.* **219**, 352

## The gamma-ray emissivity of the Earth's atmosphere

*Dean, A.J., Lei Fan, Byard, K., Goldwurm, A., Hall, C.J., Harding, J.S.J.* **219**, 358

## A powerful test for weak periodic signals with unknown light curve shape in sparse data

*De Jager, O.C., Swanepoel, J.W.H., Raubenheimer, B.C.* **221**, 180

## Imaging the gamma-ray sky with Compton telescopes

*von Ballmoos, P., Diehl, R., Schönfelder, V.* **221**, 396

## Gamma-ray lines from radioactive nuclei produced in hydrostatic stellar burning phases

*Prantzos, N.* **223**, 136

## Gamma-ray emission from pulsars

*Yongheng Zhao, Tan Lu, Kelang Huang, Jianlong Lu, Qiuhe Peng* **223**, 147

## The radioactivity of SN 1987 A

*Lehoucq, R., Cassé, M., Cesarsky, C.J.* **224**, 117

## Stochastic acceleration of solar protons in the transrelativistic region

*Steinacker, J., Schlickeiser, R.* **224**, 259

## An upper limit on the high-energy gamma-ray emission of Vela X-1

*Mattox, J.R., Ögelman, H., Kanbach, G.* **226**, 145

## A potential diagnostic for low energy, nonthermal protons in solar flares

*MacKinnon, A.L.* **226**, 284

## Gas dynamics; see Hydrodynamics and hydromagnetics

## Grains; see Interstellar medium: dust; Interplanetary medium

## Gravitation

Probable additional gravitational images related to the Cl 2244-02 arc and  $B$ ,  $V$ ,  $R$  photometry of the cluster core

*Hammer, F., Le Fèvre, O., Jones, J., Rigaut, F., Soucail, G.* **208**, L7

## Observations of the Einstein Cross 2237+030 with the TIGER Integral Field Spectrograph

*Adam, G., Bacon, R., Courtès, G., Georgelin, Y., Monnet, G., Pécontal, E.* **208**, L15

## Photoproduction of high-frequency gravitational radiation by galactic and extragalactic sources

*Papini, G., Valhuri, S.-R.* **208**, 345

## Concerning the preferred surface density of giant molecular clouds in the Galaxy

*Milgrom, M.* **211**, 37

## Fragmenting the universe. II. Voronoi vertices as Abell clusters

*van de Weygaert, R., Icke, V.* **213**, 1

## Possible gravitational amplification in the binary pulsar 1957+20

*Schneider, J.* **214**, 1

## Gravitational micro-lensing due to an ensemble of compact objects with different masses

*Kayser, R., Weiss, A., Refsdal, S., Schneider, P.* **214**, 4

## The statistical properties of gravitational lenses of galaxies and quasars

*Xiangping Wu* **214**, 43

The value of the time delay  $\Delta T(A, B)$  for the "double" quasar 0957+561 from optical photometric monitoring

*Vanderriest, C., Schneider, J., Herpe, G., Chevreton, M., Moles, M., Wlérick, G.* **215**, 1

## First gravity wave coincidence experiment between resonant cryogenic detectors: Louisiana-Rome-Stanford

*Amaldi, E., Aguiar, O., Bassan, M., Bonifazi, P., Carelli, P., Castellano, M.G., Cavallari, G., Coccia, E., Cosmelli, C., Fairbank, W.M., Frasca, S., Foglietti, V., Habel, R., Hamilton, W.O., Henderson, J., Johnson, W., Lane, K.R., Mann, A.G., McAshan, M.S., Michelson, P.F., Modena, I., Pallottino, G.V., Pizzella, G., Price, J.C., Rapagnani, R., Ricci, F., Solomonson, N., Stevenson, T.R., Taber, R.C., Xu, B.-X.* **216**, 325

## Statistical distributions and gravitational halos

*Membrado, M., Pacheco, A.F., Sañudo, J.* **217**, 92

## Equilibrium configuration for an inertially dragged viscous fluid around a slowly rotating compact object

*Prasanna, A.R.* **217**, 329

## Towards the birth of gravitational astronomy. I. Number of events expected from gravitational wave detection by interferometry

*Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tournenc, P.* **217**, 375

## Towards the birth of gravitational astronomy. II. Directivity and number of events in coincidences expected from gravitational wave detection by interferometry

*Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tournenc, P.* **217**, 381

## How to determine a Tolman-Bondi universe from ideal observable and theoretical relations

*Rindler, W., Suson, D.* **218**, 15

## Freely propagating polarized radiation in curved space-times

*Bildhauer, S.* **219**, 25

- The gravitational lens effect of the Virgo Supercluster  
*Xu Chongming, Fabbri, R., Wu Xuejun* **220**, 30
- Amplification near gravitational lens caustics  
*Kayser, R., Witt, H.J.* **221**, 1
- The number excess of galaxies around high redshift quasars  
*Schneider, P.* **221**, 221
- Galaxies near distant quasars: observational evidence for statistical gravitational lensing (Part II)  
*Fugmann, W.* **222**, 45
- A class of solutions in Newtonian cosmology and the pancake theory  
*Buchert, T.* **223**, 9
- The gravitational lens hypothesis for 0846+51 W1 supported by new observations  
*Stickel, M., Fried, J.W., Kühr, H.* **224**, L27
- Giant luminous arcs from lensing: determination of the mass distribution inside distant cluster cores  
*Hammer, F., Rigaut, F.* **226**, 45
- Herbig-Haro objects**
- The L 1551 IRS 5 CO bipolar outflow: acceleration and origin  
*Fridlund, C.V.M., Sandqvist, A., Nordh, H.L., Olofsson, G.* **213**, 310
- High resolution H I observations of dark clouds. II. L 1551  
*van der Werf, P.P., Dewdney, P.E., Goss, W.M., Vanden Bout, P.A.* **216**, 215
- IRAS observations of the star-forming dark cloud ESO 210-6 A and the associated near-infrared source HH 47/46 IRS  
*Sahu, M., Sahu, K.C., Pottasch, S.R.* **218**, 221
- Herbig-Haro objects in flows from young stars in Orion  
*Reipurth, B.* **220**, 249
- Near-infrared images of young objects in the HH 1-2 and HH 3 regions  
*Roth, M., Tapia, M., Rubio, M., Rodriguez, L.F.* **222**, 211
- High signal/noise  $^{13}\text{CO}$  observations of the bipolar outflow in L 1551  
*Fridlund, C.V.M., White, G.J.* **223**, L13
- Simulations of the flux contours of astrophysical jets  
*Zaninetti, L.* **223**, 369
- Z CMa: a large-scale high velocity bipolar outflow traced by Herbig-Haro objects and a jet  
*Poetzel, R., Mundt, R., Ray, T.P.* **224**, L13
- Hydrodynamics**
- Models of head-on collisions between a white dwarf and a low-mass main-sequence star  
*Różyczka, M., Yorke, H.W., Bodenheimer, P., Müller, E., Hashimoto, M.* **208**, 69
- Radiation hydrodynamics of the boundary layer in accretion disks. I. Numerical methods  
*Kley, W.* **208**, 98
- Langmuir wave generation by thick target electron beams in solar flares: the effects of density variations and reverse currents  
*McClements, K.G.* **208**, 279
- The structure equations of contact binaries and the light curve paradox  
*Kähler, H.* **209**, 67
- Radiation-hydrodynamic equations for stellar oscillations  
*Da-run Xiong* **209**, 126
- A model for a stellar wind driven by linear acoustic waves  
*Pijpers, F.P., Hearn, A.G.* **209**, 198
- Time-dependent effects of acoustic wave heating and molecular cooling in the outer atmosphere of Arcturus  
*Cuntz, M., Muchmore, D.* **209**, 305
- Collision of a high-velocity cloud with a dust cloud in the galactic halo  
*Rohlf, R., Herbstmeier, U., Mebold, U., Winnberg, A.* **211**, 402
- The dynamics of the Calabash Nebula  
*Icke, V., Preston, H.L.* **211**, 409
- A numerical simulation study of solar granular convection in cells of different horizontal dimension  
*Steffen, M., Ludwig, H.-G., Krüß, A.* **213**, 371
- The internal rotation of the Sun  
*Tassoul, J.-L., Tassoul, M.* **213**, 397
- Asymmetrical barred galaxies  
*Colin, J., Athanassoula, E.* **214**, 99
- Driving the stellar wind of AGB stars by acoustic waves; exploration of a simple model  
*Pijpers, F.P., Habing, H.J.* **215**, 334
- SNR expansion in a pre-existent cavity  
*Ciotti, L., D'Ercole, A.* **215**, 347
- Hydrodynamics of the interstellar gas in colliding galaxies. II. Non-central collisions  
*Müller, E., Mair, G., Hillebrandt, W.* **216**, 19
- The combined role of ionization and supernova explosions in the destruction of molecular clouds  
*Yorke, H.W., Tenorio-Tagle, G., Bodenheimer, P., Różyczka, M.* **216**, 207
- Photon surfing near compact accreting objects  
*Icke, V.* **216**, 294
- Global modes of oscillation of magnetized stars  
*Nasiri, S., Sobouti, Y.* **217**, 127
- Solar differential rotation as a multiparameter turbulence problem  
*Tuominen, I., Rüdiger, G.* **217**, 217
- AMLT: anisotropic mixing length theory  
*Canuto, V.M.* **217**, 333
- A conservative second-order difference scheme for curvilinear coordinates. I. Assignment of variables on a staggered grid  
*Mönchmeyer, R., Müller, E.* **217**, 351
- Numerical simulation of acoustic instabilities in thin accretion disks  
*Kaisig, M.* **218**, 89
- Mixing and fragmentation in supernova envelopes  
*Müller, E., Hillebrandt, W., Orlo, M., Höflich, P., Mönchmeyer, R., Fryxell, B.A.* **220**, 167
- Time-dependent corona models: dynamical response to perturbations  
*Korevaar, P., Hearn, A.G.* **220**, 177
- Radiative shocks in atomic and molecular stellar atmospheres. III. The shock wave velocity problem in Mira stars  
*Gillet, D., Lafon, J.-P.J., David, P.* **220**, 185
- Non-equilibrium ionisation in supernova remnants: the case of Tycho  
*Brinkmann, W., Fink, H.H., Smith, A., Haberl, F.* **221**, 385
- Radiation hydrodynamics of the boundary layer in accretion disks. II. Optically thick models  
*Kley, W.* **222**, 141
- A class of solutions in Newtonian cosmology and the pancake theory  
*Buchert, T.* **223**, 9



- Inferences concerning water vapour viscosity and mean free path at low temperatures  
*Crifo, J.F.* **223**, 365
- Time-dependent corona models: global relaxation oscillations  
*Korevaar, P., Hearn, A.G.* **224**, 141
- Time-dependent corona models: scaling laws  
*Korevaar, P., Martens, P.C.H.* **226**, 203
- Time-dependent corona models: coronae with accretion  
*Korevaar, P.* **226**, 209
- Hydromagnetics**
- Interaction between a line current and a two-dimensional constant- $\alpha$  force-free field: an analytical model for quiescent prominences  
*Amari, T., Aly, J.J.* **208**, 261
- Effect of diverging magnetic fields on mass loss in late-type giant stars  
*Jatenco-Pereira, V., Opher, R.* **209**, 327
- Dynamics of magnetic flux concentrations: the second-order thin flux tube approximation  
*Ferriz-Mas, A., Schüssler, M., Anton, V.* **210**, 425
- Time-dependent MHD simulations for cometary plasmas  
*Schmidt-Voigt, M.* **210**, 433
- A parametric survey of model solar fluxtubes  
*Steiner, O., Pizzo, V.J.* **211**, 447
- Dissipative processes in relativistic magnetohydrodynamics  
*Okamoto, I.* **211**, 476
- Configuration of large-scale magnetic fields in spiral galaxies  
*Krasheninnikova (Baryshnikova), Ruzmaikin, A., Sokoloff, D., Shukurov, A.* **213**, 19
- The stability of nonlinear dynamos and the limited role of kinematic growth rates  
*Brandenburg, A., Krause, F., Meinel, R., Moss, D., Tuominen, I.* **213**, 411
- Turbulent transport of magnetic fields. IV. Damping of the mean field  $\langle B \rangle$  in  $\alpha^2$ -dynamos with  $\alpha \propto \cos \theta$   
*van Geffen, J.H.G.M., Hoyng, P.* **213**, 429
- Observable parameters of spiral galaxies and galactic magnetic fields  
*Starchenko, S.V., Shukurov, A.M.* **214**, 47
- Determination of solenoidal horizontal velocities in solar active regions  
*Berton, R.* **215**, 168
- A model for a non-Keplerian magnetic accretion disk with a magnetically heated corona  
*Heyvaerts, J.F., Priest, E.R.* **216**, 230
- Determination of constant- $\alpha$  force-free magnetic fields above the photosphere using three-component boundary conditions  
*Cuperman, S., Ofman, L., Semel, M.* **216**, 265
- Global modes of oscillation of magnetized stars  
*Nasiri, S., Sobouti, Y.* **217**, 127
- The generation of MHD waves by forced turbulence in a weakly magnetized fluid  
*Rosner, R., Musielak, Z.E.* **219**, L27
- Current sheets in two-dimensional potential magnetic fields. I. General properties  
*Aly, J.J., Amari, T.* **221**, 287
- Synchrotron-cooling-included fine structure in extragalactic radio sources  
*Achterberg, A.* **221**, 364
- Non-equilibrium ionisation in supernova remnants: the case of Tycho  
*Brinkmann, W., Fink, H.H., Smith, A., Haberl, F.* **221**, 385
- Current sheet as a diagnostic for the subphotospheric structure of a spot  
*Jahn, K.* **222**, 264
- Resonant absorption of magnetogravity waves in an isothermal atmosphere permeated by a nearly horizontal magnetic field in the presence of radiative exchange  
*Zhukov, V.I.* **222**, 293
- Stationary siphon flows in thin magnetic flux tubes  
*Degenhardt, D.* **222**, 297
- Non-linear dynamos. I. One-dimensional model of a thin layer dynamo  
*Schmitt, D., Schüssler, M.* **223**, 343
- Solution topologies for cosmic ray modified galactic winds. I. Spherical symmetry  
*Zank, G.P.* **225**, 37
- Towards a self-consistent description of accretion columns. II. Frequency-dependent radiation hydrodynamics  
*Rebetzky, A., Bock, U., Herold, H., Kraus, U., Maile, T., Nollet, H.-P., Ruder, H., Wolf, K.* **225**, 137
- Model for the fibril structure of solar prominences  
*Ballester, J.L., Priest, E.R.* **225**, 213
- Solutions for the equilibrium of static isothermal gas clouds with poloidal magnetic fields  
*Baureis, P., Ebert, R., Schmitz, F.* **225**, 405
- Numerical studies on magnetic braking of interstellar clouds  
*Dorfi, E.* **225**, 507
- Dynamic stabilization of unstable gravity modes by magnetic fields in non-uniform and compressible plasmas  
*Hermans, D., Goossens, M.* **225**, 569
- HII regions**; see Interstellar medium: HII regions
- Image processing**
- Restoration of Vega-1 pictures of the nucleus of comet P/Halley: a new method revealing clear contours and jets  
*Dimarellis, E., Bertaux, J.L., Abergel, A.* **208**, 327
- Simulated annealing image reconstruction in photon-limited stellar speckle interferometry  
*Navarro, R., Fuentes, F.J., Nieto-Vesperinas, M.* **208**, 374
- Application of Lagrangian multipliers in hybrid mapping  
*Massi, M.* **208**, 392
- The distribution and kinematics of the ionized gas in the galactic centre region  
*Schwarz, U.J., Bregman, J.D., van Gorkom, J.H.* **215**, 33
- Extinction towards the Orion nebula derived from  $P\gamma/H\delta$  and  $[SII]$  1.04  $\mu m/4071$  Å line ratios  
*Greve, A., McKeith, C.D., Barnett, E.W., Götz, M.* **215**, 113
- Imagery with infrared arrays. I. Ground-based system and astronomical performances  
*Lacombe, F., Tiphène, D., Rouan, D., Léna, P., Combes, M.* **215**, 211
- Radio source structure from geodetic VLBI observations: evolution of the quasar 3C 345 at 8 GHz  
*Tang, G., Rönnäng, B., Bååth, L.* **216**, 31
- Phobos and Deimos astrometric observations from Mariner 9  
*Duxbury, T.C., Callahan, J.D.* **216**, 284
- Technical aspects of the speckle masking phase reconstruction algorithm  
*Pehlemann, E., von der Lüh, O.* **216**, 377
- A search for Lyman- $\alpha$  emitting objects in a structure between a quasar pair at a redshift of 2  
*Rhee, G.F.R.N., Webb, J.K., Katgert, P.* **217**, 1

Image deconvolution applied to the 3C 273 jet

*Fraix-Burnet, D., Nieto, J.-L., Roques, S.* **217**, 387

Erratum: Simulated annealing image reconstruction in photon-limited stellar speckle interferometry

*Navarro, R., Fuentes, F.J., Nieto-Vesperinas, M.* **219**, 362

Derivation of photographic characteristic curves with a birefringent calibration device

*Griffin, R. & R.* **222**, 358

The phase problem in optical interferometry: error analysis in the presence of photon noise

*Chelli, A.* **225**, 277

Photon-counting imaging with a GaAs photocathode: evaluation of the Red-RANICON for astronomical imaging

*Clampin, M., Paresce, F.* **225**, 578

Responsivity variations in the IRAS survey

*Deul, E.R., Walker, H.J.* **226**, 418; **81**, 207

### Infrared radiation

Infrared observations and the fundamental properties of white dwarf stars

*Leggett, S.K.* **208**, 141

IRAS Low Resolution Spectrograph spectral class and M and S Miras

*Vardya, M.S.* **209**, 165

Infrared emission from the sub-arcsecond vicinity of SN 1987 A

*Chalabaev, A.A., Perrier, C., Mariotti, J.-M.* **210**, L1

Infrared excess and H $\alpha$  luminosity in Be stars: a constant thickness disc model

*Kastner, J.H., Mazzali, P.A.* **210**, 295

Optical spectroscopy and near-infrared mapping of S 106

*Riera, A., Mampaso, A., Phillips, J.P., Vilchez, J.M.* **210**, 351

Circumstellar dust around HR 4049: a critical test for theories of interstellar dust

*Waters, L.B.F.M., Lamers, H.J.G.L.M., Snow, T.P., Mathlener, E., Trams, N.R., van Hoof, P.A.M., Waelkens, C., Seab, C.G., Stanga, R.* **211**, 208

A new radio continuum survey of the Magellanic Clouds at 1.4 GHz. II. The radio morphology, and thermal and nonthermal emission of the LMC

*Klein, U., Wielebinski, R., Haynes, R.F., Malin, D.F.* **211**, 280

OH properties of Mira stars

*Sivagnanam, P., Le Squeren, A.M., Foy, F., Tran Minh, F.* **211**, 341

The internal magnetic field distribution and the diameters of solar magnetic elements

*Zayer, I., Solanki, S.K., Stenflo, J.O.* **211**, 463

Detection of CO(1 $\rightarrow$ 0) emission from infrared quasars and luminous Seyfert galaxies

*Sanders, D.B., Scoville, N.Z., Zensus, A., Soifer, B.T., Wilson, T.L., Zylka, R., Steppe, H.* **213**, L5

Intermediate-infrared excesses of barium stars

*Hakkila, J.* **213**, 204

The nature of the cometary nebula 1548 C 27

*Vilchez, J.M., Mampaso, A., Riera, A., Phillips, J.P.* **213**, 303

The photodissociation of water in cometary atmospheres

*Crovisier, J.* **213**, 459

Strategies for 2-dimensional telescope motion in optical interferometry

*Vivekanand, M., Morris, D., Downes, D.* **213**, 516

Near-infrared survey of IRAS sources with colours like planetary nebulae

*Manchado, A., Pottasch, S.R., García-Lario, P., Esteban, C., Mampaso, A.* **214**, 139

Search for cool giant companions of the Be stars  $\zeta$  Tauri and KX Andromedae

*Floquet, M., Hubert, A.M., Maillard, J.P., Chauville, J., Chatzichristou, H.* **214**, 295

Infrared spectroscopy of supernova remnants

*Oliva, E., Moorwood, A.F.M., Danziger, I.J.* **214**, 307

The distribution of hot thermal methanol in Orion-KL

*Wilson, T.L., Johnston, K.J., Henkel, C., Menten, K.M.* **214**, 321

Infrared images of HL Tauri: scattering from an inclined, flaring disk

*Monin, J.-L., Pudritz, R.E., Rouan, D., Lacombe, F.* **215**, L1

The galactic emission in the 3.3  $\mu$ m aromatic feature. I. Observations

*Giard, M., Pajot, F., Lamarre, J.M., Serra, G., Caux, E.* **215**, 92

Extended CO ( $J=7-6$ ) emission from Orion Molecular Cloud 1: hot ambient gas, two hot-outflow sources

*Schmid-Burgk, J., Densing, R., Krügel, E., Nett, H., Röser, H.P., Schäfer, F., Schwaab, G., van der Wal, P., Wattenbach, R.* **215**, 150

Imagery with infrared arrays. I. Ground-based system and astronomical performances

*Lacombe, F., Tiphène, D., Rouan, D., Léna, P., Combes, M.* **215**, 211

IRAS 09149-6206, a new Seyfert I galaxy

*Pérez, E., Manchado, A., Pottasch, S.R., García-Lario, P.* **215**, 262

The submillimeter continuum of active galaxies

*Chini, R., Krügel, E., Kreysa, E., Gemünd, H.-P.* **216**, L5

Physics of IR emission by interstellar PAH molecules

*Léger, A., d'Hendecourt, L., Défourneau, D.* **216**, 148

The nature of the 2.8- $\mu$ m emission feature in cometary spectra

*Bockelée-Morvan, D., Crovisier, J.* **216**, 278

Search for water vapor masers in the direction of IRAS sources associated with H II regions and molecular clouds

*Braz, M.A., Scalise, Jr., E., Gregorio Hetem, J.C., Monteiro do Vale, J.L., Gaylard, M.* **217**, 393; 77, 465

The effect of mass loss on the evolution of low-mass post-AGB stars

*Trams, N.R., Waters, L.B.F.M., Waelkens, C., Lamers, H.J.G.L.M., van der Veen, W.E.C.J.* **218**, L1

The correlation between radio and far-infrared emission for disk galaxies: a calorimeter theory

*Völk, H.J.* **218**, 67

Large-scale properties of interstellar dust and gas in M 33

*Deul, E.R.* **218**, 78

Determination of the absolute flux from Vega at 2.250  $\mu$ m

*Booth, A.J., Selby, M.J., Blackwell, D.E., Petford, A.D., Arribas, S.* **218**, 167

A study of M Mira variables based on IRAS LRS observations.

I. Dust formation in the circumstellar shell

*Onaka, T., de Jong, T., Willems, F.J.* **218**, 169

Dust ring around  $\lambda$  Orionis

*Zhang, C.Y., Laureijs, R.J., Chlewicki, G., Clark, F.O., Wesselius, P.R.* **218**, 231

New near-IR photometry of southern planetary nebulae

*Preite-Martinez, A., Persi, P.* **218**, 264

IRAS 16455-3455 and IRAS 15154-5258: two new southern planetary nebulae

*Manchado, A., García-Lario, P., Pottasch, S.R.* **218**, 267

- The effect of primordial perturbations on the extragalactic infrared background  
*Fabbri, R., Lucchin, F., Matarrese, S.* **219**, 7
- The nature of radio-quiet quasars  
*Chini, R., Kreyssa, E., Biermann, P.L.* **219**, 87
- Dust emission from an isolated interstellar cloud  
*Laureijs, R.J., Chlewicki, G., Clark, F.O., Wesselius, P.R.* **220**, 226
- Optical and infrared observations of the H II region S 201  
*Mampaso, A., Phillips, J.P., Vilchez, J.M., Pişmiş, P., Riera, A.* **220**, 235
- The influence of temperature on the infrared spectrum of the coronene molecule  
*Bernard, J.P., d'Hendecourt, L.B., Léger, A.* **220**, 245
- Infrared observations of Io during the mutual events of 1985: evidence of volcanic activity?  
*Medina, F., Echevarría, J., Ledezma, E., Martínez, F.* **220**, 313
- Infrared observations of the Magellanic Clouds. I. The Small Magellanic Cloud  
*Schwing, P.B.W., Israel, F.P.* **220**, 343; **79**, 79
- Infrared observations of the Magellanic Clouds. II. The Large Magellanic Cloud  
*Schwing, P.B.W.* **220**, 343; **79**, 105
- Water-vapor maser emission from bright, unassociated IRAS point sources  
*Scalise, E., Jr., Rodriguez, L.F., Mendoza-Torres, E.* **221**, 105
- Near-infrared speckle observations of the Red Rectangle  
*Leinert, Ch., Haas, M.* **221**, 110
- Near-infrared observations and optical identifications of a few unassociated IRAS sources with dust shells  
*Iyengar, K.V.K., Ghosh, S.K., Rengarajan, T.N., Verma, R.P., Joshi, S.C., Srivastava, R.K.* **221**, 250
- Is HS 240 an interstellar bubble?  
*Wisotzki, L., Wendker, H.J.* **221**, 311
- A Bayesian classification of the IRAS LRS Atlas  
*Goebel, J., Volk, K., Walker, H., Gerbault, F., Cheeseman, P., Self, M., Stutz, J., Taylor, W.* **222**, L5
- An infrared search for obscured globular clusters associated with X-ray sources  
*van Paradijs, J., Isaacman, R.* **222**, 129
- Bipolar radio morphology in the compact nebula K 3-35  
*Aaquist, O.B., Kwok, S.* **222**, 227
- Infrared and radio recombination line observations of DR 21  
*Roelfsema, P.R., Goss, W.M., Geballe, T.R.* **222**, 247
- The discovery of interstellar carbon dioxide  
*d'Hendecourt, L.B., Jourdain de Muizon, M.* **223**, L5
- The Serpens sources SVS 4 and FIRS 1: new results from infrared images  
*Eiroa, C., Casali, M.M.* **223**, L17
- Observations of the submillimetre integrated galactic emission from the South Pole  
*Pajot, F., Gispert, R., Lamarre, J.M., Peyturaux, R., Pomerantz, M.A., Puget, J.L., Serra, G., Maurel, C., Pfeiffer, R., Renault, J.C.* **223**, 107
- Near-infrared morphology of protoplanetary nebulae: the icy dust torus of Minkowski's Footprint (M1-92)  
*Eiroa, C., Hodapp, K.-W.* **223**, 271
- CO and IR in L1228: extended bipolar molecular outflow and strongly self-absorbed  $^{12}\text{CO}$  emission  
*Haikala, L.K., Laureijs, R.J.* **223**, 287
- Erratum:* Star counts and IRAS sources in southern dark clouds  
*Gregorio Hetem, J.C., Sanzovo, G.C., Lépine, J.R.D.* **223**, 380; **79**, 452
- IRAS sources beyond the solar circle. I. CO observations  
*Wouterloot, J.G.A., Brand, J.* **224**, 362; **80**, 149
- Infrared photometry and spectrophotometry of SN 1987 A. I. March to October 1987 observations  
*Bouchet, P., Moneti, A., Slezak, E., Le Bertre, T., Manfroid, J.* **224**, 367; **80**, 379
- The line of sight towards AFGL 961: detection of the libration band of water ice at 13.6  $\mu\text{m}$   
*Cox, P.* **225**, L1
- A model for the far-IR emission of non-Seyfert Markarian galaxies  
*Xu, C., De Zotti, G.* **225**, 12
- Observations of the He I 10830 Å line in main-sequence O9-B9 stars and comparison with non-LTE predictions  
*Lennon, D.J., Dufton, P.L.* **225**, 439
- The far-infrared (IRAS) excess in BQ [ ] and related stars  
*Parthasarathy, M., Pottasch, S.R.* **225**, 521
- Search for extragalactic backgrounds: a balloon-borne 4-band FIR differential photometer with large throughput  
*Masi, S., Dall'Oglio, G., de Bernardis, P., de Santis, E., Epifani, M., Giovannozzi, E., Guarini, G., Melchiorri, F., Boscaleri, A., Natale, V., Guidi, I.* **226**, 357
- Responsivity variations in the IRAS survey  
*Deul, E.R., Walker, H.J.* **226**, 418; **81**, 207
- A study of M Mira variables based on IRAS LRS observations. II. Models fits and derived parameters for 109 Miras  
*Onaka, T., de Jong, T., Willems, F.J.* **226**, 418; **81**, 261
- Instruments;** see also: Interferometry; Radiotelescopes; Space vehicles
- Application of Lagrangian multipliers in hybrid mapping  
*Massi, M.* **208**, 392
- Three-reflection telescopes: two-mirror aplanatic solutions  
*Amoretti, M., Badiali, M., Preite-Martinez, A.* **211**, 250
- The implications of image scrambling and focal ratio degradation in fibre optics on the design of astronomical instrumentation  
*Clayton, C.A.* **213**, 502
- Imagery with infrared arrays. I. Ground-based system and astronomical performances  
*Lacombe, F., Tiphène, D., Rouan, D., Léna, P., Combes, M.* **215**, 211
- The Swedish-ESO Submillimetre Telescope (SEST)  
*Booth, R.S., Delgado, G., Hagström, M., Johansson, L.E.B., Murphy, D.C., Olberg, M., Whyborn, N.D., Greve, A., Hansson, B., Lindström, C.O., Rydberg, A.* **216**, 315
- First gravity wave coincidence experiment between resonant cryogenic detectors: Louisiana-Rome-Stanford  
*Amaldi, E., Aguiar, O., Bassan, M., Bonifazi, P., Carelli, P., Castellano, M.G., Cavallari, G., Coccia, E., Cosmelli, C., Fairbank, W.M., Frasca, S., Foglietti, V., Habel, R., Hamilton, W.O., Henderson, J., Johnson, W., Lane, K.R., Mann, A.G., McAshan, M.S., Michelson, P.F., Modena, I., Pallottino, G.V., Pizzella, G., Price, J.C., Rapagnani, R., Ricci, F., Solomonson, N., Stevenson, T.R., Taber, R.C., Xu, B.-X.* **216**, 325
- Wavefront correlation functions of segmented mirrors  
*Kühne, C.* **216**, 333

High resolution solar bidimensional spectroscopy with a Universal Birefringent Filter in tandem with a Fabry-Perot interferometer

Bonaccini, D., Cavallini, F., Ceppatelli, G., Righini, A. **217**, 368

The Thomson THX31513 linear array in a photon counting mode under electron bombardment: evaluation tests and first results

Cuby, J.G., Baudrand, J., Chevreton, M. **220**, 335

Imaging the gamma-ray sky with Compton telescopes

von Ballmoos, P., Diehl, R., Schönfelder, V. **221**, 396

Derivation of photographic characteristic curves with a birefringent calibration device

Griffin, R. & R. **222**, 358

Optimization of parameters for helioseismology experiments measuring solar radial velocities

Appourchaux, T. **222**, 361

Electric antennae in the outer heliosphere: the importance of being stable

Meyer-Vernet, N. **224**, L5

Solar feature correlation tracker for ground-based telescopes

von der Lühe, O., Widener, A.L., Rimmele, Th., Spence, G., Dunn, R.B., Wiborg, P. **224**, 351

Photon-counting imaging with a GaAs photocathode: evaluation of the Red-RANICON for astronomical imaging

Clampin, M., Paresce, F. **225**, 578

Search for extragalactic backgrounds: a balloon-borne 4-band FIR differential photometer with large throughput

Masi, S., Dall'Oglio, G., de Bernardis, P., de Santis, E., Epifani, M., Giovannozzi, E., Guarini, G., Melchiorri, F., Boscaleri, A., Natale, V., Guidi, I. **226**, 357

Responsivity variations in the IRAS survey

Deul, E.R., Walker, H.J. **226**, 418; **81**, 207

## Interferometry

A detailed study of the OH megamaser galaxy IRAS 17208-0014

Martin, J.M., Bottinelli, L., Dennefeld, M., Gouguenheim, L., Le Squeren, A.M. **208**, 39

Scanning interferometer observations of the SNR N186D in the Large Magellanic Cloud

Laval, A., Rosado, M., Boulesteix, J., Georgelin, Y.P., Marcelin, M., Monnet, G., Le Coarer, E. **208**, 230

Terrestrial transmitters as phase calibrators in disconnected interferometry

Woan, G., Duffett-Smith, P.J. **208**, 381

Application of Lagrangian multipliers in hybrid mapping

Massi, M. **208**, 392

Infrared emission from the sub-arcsecond vicinity of SN 1987A

Chalabaev, A.A., Perrier, C., Mariotti, J.-M. **210**, L1

A compilation catalogue of positions of extragalactic radio sources

Walter, H.G. **210**, 455

The peculiar superluminal radio source 4C39.25: observations and model

Marcaide, J.M., Alberdi, A., Elósegui, P., Schalinski, C.J., Jackson, N., Witzel, A. **211**, L23

A method to estimate the motion of unresolved VLBI components in extragalactic radio sources. The case of NRAO 140

Charlot, P., Hough, D.H., Lestrade, J.-F. **211**, 261

Highly excited molecular hydrogen in M 42 and other nebulae

Hippelein, H.H., Münch, G. **213**, 323

Strategies for 2-dimensional telescope motion in optical interferometry

Vivekanand, M., Morris, D., Downes, D. **213**, 516

Search for cool giant companions of the Be stars  $\zeta$  Tauri and KX Andromedae

Floquet, M., Hubert, A.M., Maillard, J.P., Chauville, J., Chatzichristou, H. **214**, 295

Radio source structure from geodetic VLBI observations: evolution of the quasar 3C 345 at 8 GHz

Tang, G., Rönnäng, B., Bååth, L. **216**, 31

Technical aspects of the speckle masking phase reconstruction algorithm

Pehlemann, E., von der Lühe, O. **216**, 337

Three prototype compact steep spectrum radio sources

Fanti, C., Fanti, R., Parma, P., Venturi, T., Schilizzi, R.T., Nan Rendong, Spencer, R.E., Muxlow, T.W.B., van Breugel, W. **217**, 44

VLBI observations of  $\theta^1$  Orionis A

Felli, M., Massi, M., Churchwell, E. **217**, 179

Speckle interferometric study of the solar granulation from centre to limb

Druesne, P., Borgnino, J., Martin, F., Ricort, G., Aime, C. **217**, 229

Towards the birth of gravitational astronomy. I. Number of events expected from gravitational wave detection by interferometry

Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tourrenc, P. **217**, 375

Towards the birth of gravitational astronomy. II. Directivity and number of events in coincidences expected from gravitational wave detection by interferometry

Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tourrenc, P. **217**, 381

Vesta's shape, density and albedo features

Cellino, A., Di Martino, M., Drummond, J., Farinella, P., Paolicchi, P., Zappalà, V. **219**, 320

Optical and infrared observations of the H II region S201

Mampaso, A., Phillips, J.P., Vilchez, J.M., Pişmiş, P., Riera, A. **220**, 235

Search for radial velocity variations in rapidly oscillating Ap stars using the Fabry-Perot interferometric stellar oscillation spectrometer

Belmonte, J.A., Bell, C.R., Leeper, M., Pallé, P.L., Pietraszewski, K.A.R.B., Renton, R.E., Roca Cortés, T. **221**, 41

Near-infrared speckle observations of the Red Rectangle

Leinert, Ch., Haas, M. **221**, 110

A celestial reference frame based on extragalactic radio sources

Walter, H.G. **223**, 376; **79**, 283

Intercomparison of the Earth rotation parameters determined by two independent VLBI networks

Yoshino, T., Takahashi, Y., Kawaguchi, N., Heki, K., Yokoyama, K., Manabe, S. **224**, 316

The phase problem in optical interferometry: error analysis in the presence of photon noise

Chelli, A. **225**, 277

Photon-counting imaging with a GaAs photocathode: evaluation of the Red-RANICON for astronomical imaging

Clampin, M., Paresce, F. **225**, 578

Orbital elements of eight interferometric binary stars

Baize, P. **226**, 421; **81**, 415



**Intergalactic medium**

Extended X-ray emission from hot gas around the normal giant elliptical galaxy NGC 5846

*Biermann, P.L., Kronberg, P.P., Schmutzler, T.* **208**, 22

Large-scale behaviour of dust grains in a galactic environment

*Barsella, B., Ferrini, F., Greenberg, J.M., Aiello, S.* **209**, 349

Hydrodynamics of the interstellar gas in colliding galaxies. II. Non-central collisions

*Müller, E., Mair, G., Hillebrandt, W.* **216**, 19

The luminous quasar HS 1700+6416 and the shape of the "big bump" below 500 Å

*Reimers, D., Clavel, J., Groote, D., Engels, D., Hagen, H.J., Naylor, T., Wamsteker, W., Hopp, U.* **218**, 71

**Interplanetary medium**

A numerical model for a cosmic ray modulation barrier in the outer heliosphere

*Poigiet, M.S., Le Roux, J.A.* **209**, 406

Zodiacal light observed by Helios throughout solar cycle No. 21: stable dust and varying plasma

*Leinert, C., Pitz, E.* **210**, 399

Time-dependent MHD simulations for cometary plasmas

*Schmidt-Voigt, M.* **210**, 433

Polarimetry of grains in the coma of P/Halley. II. Interpretation

*Dollfus, A.* **213**, 469

Potential of grains in astrophysical media: influence of the surface state (porosity)

*Millet, J., Lafon, J.-P.J., Gonin, J.C.* **214**, 327

CN-shell structures and dynamics of the nucleus of comet P/Halley

*Schulz, R., Schlosser, W.* **214**, 375

Model interpretation of type III radio burst characteristics. II. Temporal aspects

*Reiner, M.J., Stone, R.G.* **217**, 251

Evaluation of cometary dust parameters from numerical simulations: comparison with an analytical approach and the role of anisotropic emissions

*Fulle, M.* **217**, 283

A 120-day oscillation in the solar activity and geophysical phenomena

*Djurovic, D., Pâquet, P.* **218**, 302

Radiation-induced forces on the orbits of dust particles around rotating stars

*Buitrago, J., Mediavilla, E., Portilla, M.* **221**, 258

Erratum: CN-shell structures and dynamics of the nucleus of comet P/Halley

*Schulz, R., Schlosser, W.* **222**, 367

Electric antennae in the outer heliosphere: the importance of being stable

*Meyer-Vernet, N.* **224**, L5

The influence of electron impact ionization on the distribution of interstellar helium in the inner heliosphere; possible consequences for determination of interstellar helium parameters

*Rucinski, D., Fahr, H.J.* **224**, 290

H Lyman- $\alpha$  emission at Neptune: Voyager prediction

*McConnell, J.C., Parkinson, C.D., Ben-Jaffel, L., Emerich, C., Prangée, R., Vidal-Madjar, A.* **225**, L9

Evidence for near-surface breezes on comet P/Halley

*Keller, H.U., Thomas, N.* **226**, L9

The color of the zodiacal light and the size distribution and composition of interplanetary dust

*Perrin, J.-M., Lamy, P.L.* **226**, 288

The use of Kepler trajectories to calculate ion fluxes at multi-gigameter distances from comet Halley

*Daly, P.W.* **226**, 318

Short-term cosmic-ray increases and magnetic cloud-like structures during Forbush decreases

*Iucci, N., Parisi, M., Signorini, C., Storini, M., Villaresi, G.* **226**, 421; **81**, 367

**Interstellar medium: abundances**

State selective excitation of O III by charge transfer of O IV with H

*Gargaud, M., McCarroll, R., Opradolce, L.* **208**, 251

C<sub>3</sub>H<sub>2</sub> observations in dense dark clouds

*Cox, P., Walmsley, C.M., Güsten, R.* **209**, 382

Optical spectroscopy and near-infrared mapping of S 106

*Riera, A., Mampaso, A., Phillips, J.P., Vilchez, J.M.* **210**, 351

A refined study of the rate of the N<sup>+</sup> + H<sub>2</sub> → NH<sup>+</sup> + H reaction under interstellar conditions: implications for NH<sub>3</sub> production

*Galloway, E.T., Herbst, E.* **211**, 413

Elemental depletions in single interstellar clouds

*Niedzielski, A., Krelowski, J.* **214**, 304

Physics of IR emission by interstellar PAH molecules

*Léger, A., d'Hendecourt, L., Défourneau, D.* **216**, 148

The reflection nebula around HD 26676

*Centurion, M., Vladilo, G.* **218**, 243

The production of C<sub>n</sub>O, HC<sub>n</sub>O, and H<sub>2</sub>C<sub>n</sub>O molecules in dense interstellar clouds

*Adams, N.G., Smith, D., Giles, K., Herbst, E.* **220**, 269

The <sup>12</sup>CH<sup>+</sup>/<sup>13</sup>CH<sup>+</sup> ratio toward ζ Ophiuchi

*Stahl, O., Wilson, T.L., Henkel, C., Appenzeller, I.* **221**, 321

The chemistry of silicon in dense interstellar clouds

*Herbst, E., Millar, T.J., Wlodek, S., Bohme, D.K.* **222**, 205

Spectrophotometry of southern planetary nebulae. I. Plasma diagnostics

*Acker, A., Köppen, J., Stenholm, B., Jasniewicz, G.* **224**, 363; **80**, 309

The stellar-free emission component in galactic nuclei: at low-levels, evidence for shock ionization

*Bonatto, C., Bica, E., Alloin, D.* **226**, 23

**Interstellar medium: bubbles**

Scanning interferometer observations of the SNR N 186 D in the Large Magellanic Cloud

*Laval, A., Rosado, M., Boulesteix, J., Georgelin, Y.P., Marcelin, M., Monnet, G., Le Coarer, E.* **208**, 230

A study of the composite supernova remnant G 18.95-1.1

*Fürst, E., Hummel, E., Reich, W., Sofue, Y., Sieber, W., Reif, K., Dettmar, R.-J.* **209**, 361

The dynamics of the Calabash Nebula

*Icke, V., Preston, H.L.* **211**, 409

The high excitation extended gas in NGC 1068: a probe to the central hidden absorbing torus

*Bergeron, J., Petitjean, P., Durret, F.* **213**, 61

SNR expansion in a pre-existent cavity

*Ciotti, L., D'Ercole, A.* **215**, 347

Is HS 240 an interstellar bubble?

*Wisotzki, L., Wendker, H.J.* **221**, 311

Dynamical Voronoi tessellation. I. The two-dimensional case

*Zaninetti, L.* **224**, 345

The expansive motions around the central hole of the complex giant filamentary shell DEM 34 (N11) in the Large Magellanic Cloud

*Meaburn, J., Solomos, N., Laspias, V., Goudis, C.* **225**, 497

**Interstellar medium: clouds: general**

Carbon monoxide along the line of sight to galactic center infrared sources

*Geballe, T.R., Baas, F., Wade, R.* **208**, 255

On the electrostatic potential and charge of cosmic grains. III. Grains in diffuse and dense interstellar clouds

*Bel, N., Lafon, J.-P.J., Viala, Y.P., Loireux, E.* **208**, 331

C<sub>3</sub>H<sub>2</sub> observations in dense dark clouds

*Cox, P., Walmsley, C.M., Güsten, R.* **209**, 382

A newborn Trapezium within a bipolar nebula

*Neckel, T., Staude, H.J., Meisenheimer, K., Chini, R., Güsten, R.* **210**, 378

Molecular clouds in irregular galaxies. I. An ultramassive complex in NGC 3077?

*Becker, R., Schilke, P., Henkel, C.* **211**, L19

Concerning the preferred surface density of giant molecular clouds in the Galaxy

*Milgrom, M.* **211**, 37

Observations of CO ( $J=7-6$ ) in star-forming regions

*Krügel, E., Densing, R., Nett, H., Röser, H.P., Schäfer, F., Schmid-Burgk, J., Schwaab, G., van der Wal, P., Wattenbach, R.* **211**, 419

A physical analysis of Si II and C II layers in four molecular cloud edges: NGC 3576, NGC 6334, S 87, and S 88

*Vallée, J.P.* **213**, 295

Capture of field stars by molecular clouds

*Bhatt, H.C.* **213**, 299

A study of the interstellar medium in line to NGC 5128 from high resolution observations of the supernova 1986G

*D'Odorico, S., di Serego Alighieri, S., Pettini, M., Magain, P., Nissen, P.E., Panagia, N.* **215**, 21

The combined role of ionization and supernova explosions in the destruction of molecular clouds

*Yorke, H.W., Tenorio-Tagle, G., Bodenheimer, P., Różyczka, M.* **216**, 207

IRAS observations of the star-forming dark cloud ESO 210-6 A and the associated near-infrared source HH 47/46 IRS

*Sahu, M., Sahu, K.C., Pottasch, S.R.* **218**, 221

The DRAO Galactic plane survey. I.  $l=140^\circ$ ,  $b=0^\circ$

*Green, D.A.* **218**, 343; **78**, 277

<sup>12</sup>CO ( $J=1-0$ ) and ( $J=2-1$ ) mapping of the  $\zeta$  Ophiuchi diffuse cloud

*Le Bourlot, J., Gérin, M., Pérault, M.* **219**, 279

HCN and HNC observations towards dark clouds

*Harju, J.* **219**, 293

A survey of several southern high-velocity complexes

*Bajaja, E., Cappa de Nicolau, C.E., Martin, M.C., Morras, R., Olano, C.A., Pöppel, W.G.L.* **219**, 363; **78**, 345

Dynamical mixing in molecular clouds

*Chièze, J.P., Pineau des Forêts, G.* **221**, 89

A high resolution millimetre and submillimetre study of W 3

*Richardson, K.J., Sandell, G., White, G.J., Duncan, W.D., Krisciunas, K.* **221**, 95

The detection of CN and HNC mm-wave absorption lines in spiral-arm gas clouds

*Nyman, L.-A., Millar, T.J.* **222**, 231

The discovery of interstellar carbon dioxide

*d'Hendecourt, L.B., Jourdain de Muizon, M.* **223**, L5

High latitude molecular clouds: distances derived from accurate photometry

*Franco, G.A.P.* **223**, 313

**Erratum:** Star counts and IRAS sources in southern dark clouds  
*Gregorio Hetem, J.C., Sanzovo, G.C., Lépine, J.R.D.* **223**, 380; **79**, 452

Numerical simulations of scattering in the interstellar medium applied to rapid radio variability in the quasar 0917+624

*Wambsganss, J., Schneider, P., Quirrenbach, A., Witzel, A.* **224**, L9

Magnetised molecular cloud edges

*Vallée, J.P.* **224**, 191

Zeeman splitting in interstellar molecules

*Bel, N., Leroy, B.* **224**, 206

IRAS sources beyond the solar circle. I. CO observations

*Wouterloot, J.G.A., Brand, J.* **224**, 362; **80**, 149

Solutions for the equilibrium of static isothermal gas clouds with poloidal magnetic fields

*Baureis, P., Ebert, R., Schmitz, F.* **225**, 405

Numerical studies on magnetic braking of interstellar clouds

*Dorfi, E.* **225**, 507

The interpretation of correlations between observed parameters of molecular clouds

*Kegel, W.H.* **225**, 517

A reference catalogue of maser and thermal emission circumstellar SiO molecules

*Engels, D., Heske, A.* **226**, 421; **81**, 323

**Interstellar medium: clouds: high velocity**

Collision of a high-velocity cloud with a dust cloud in the galactic halo

*Rohlf, R., Herbstmeier, U., Mebold, U., Winnberg, A.* **211**, 402

A survey of several southern high-velocity complexes

*Bajaja, E., Cappa de Nicolau, C.E., Martin, M.C., Morras, R., Olano, C.A., Pöppel, W.G.L.* **219**, 363; **78**, 345

Study of the fine structure in a high-velocity velocity cloud

*Cavarischia, G.A., Morras, R.* **219**, 364; **78**, 437

A search for high-velocity H I in nearby face-on spiral galaxies

*Wakker, B.P., Broeils, A.H., Tilanus, R.P.J., Sancisi, R.* **226**, 57

**Interstellar medium: clouds: individual****B335**

The high density molecular cores near L1551-IRS5 and B335-FIR

*Menten, K.M., Harju, J., Olano, C.A., Walmsley, C.M.* **223**, 258

**Coalsack**

A CO survey of the Southern Coalsack

*Nyman, L.-Å., Bronfman, L., Thaddeus, P.* **216**, 185

The distance and structure of the Coalsack. I. Photometric data

*Seidensticker, K.J.* **220**, 343; **79**, 61

The distance and structure of the Coalsack. II. Analysis

*Seidensticker, K.J., Schmidt-Kaler, Th.* **225**, 192

**DR 21/DR 21(OH)**

Small-scale structure in the DR 21/DR 21 (OH) region: a high resolution continuum study at millimetre and submillimetre wavelengths

*Richardson, K.J., Sandell, G., Krisciunas, K.* **224**, 199

**ESO 210-6 A**

IRAS observations of the star-forming dark cloud ESO 210-6 A and the associated near-infrared source HH 47/46 IRS

*Sahu, M., Sahu, K.C., Pottasch, S.R.* **218**, 221

**G 300-17**

Dust emission from an isolated interstellar cloud

*Laureijs, R.J., Chlewicki, G., Clark, F.O., Wesselius, P.R.* **220**, 226

**G 34.3+0.15**

The "ultracompact hot core" of G 34.3+0.15: arcsecond resolution ammonia observations

*Heaton, B.D., Little, L.T., Bishop, I.S.* **213**, 148

**L 1551**

The L 1551 IRS 5 CO bipolar outflow: acceleration and origin

*Fridlund, C.V.M., Sandqvist, Aa., Nordh, H.L., Olofsson, G.* **213**, 310

High resolution H I observations of dark clouds. II. L 1551

*van der Werf, P.P., Dewdney, P.E., Goss, W.M., Vanden Bout, P.A.* **216**, 215

Rotating  $\text{H}^{13}\text{CO}^+$  disk and corotating  $\text{H}^{12}\text{CO}^+$  lobes in the L 1551 outflow source

*Liljeström, T.* **219**, L19

High signal/noise  $^{13}\text{CO}$  observations of the bipolar outflow in L 1551

*Fridlund, C.V.M., White, G.J.* **223**, L13

The high density molecular cores near L1551-IRS5 and B335-FIR

*Menten, K.M., Harju, J., Olano, C.A., Walmsley, C.M.* **223**, 258

**L 1642**

CO outflow and properties of the molecular gas around the far-infrared point source IRAS 04325-1419 in Lynds 1642

*Liljeström, T., Mattila, K., Friberg, P.* **210**, 337

**L 1228**

CO and IR in L 1228: extended bipolar molecular outflow and strongly self-absorbed  $^{12}\text{CO}$  emission

*Haikala, L.K., Laureijs, R.J.* **223**, 287

**L673**

An extended outflow in L 673

*Armstrong, J.T., Winnewisser, G.* **210**, 373

**MWC 349**

Time-variable recombination line emission in MWC 349

*Martín-Pintado, J., Thum, C., Bachiller, R.* **222**, L9

**M 17SW**

Erratum: A multi-line  $\text{NH}_3$  study of the M 17SW molecular cloud

*Güsten, R., Fiebig, D.* **215**, 218

**NGC 3077**

Molecular clouds in irregular galaxies. I. An ultramassive complex in NGC 3077

*Becker, R., Schilke, P., Henkel, C.* **211**, L19

**OMC-1**

Extended CO ( $J=7-6$ ) emission from Orion Molecular Cloud 1: hot ambient gas, two hot-outflow sources

*Schmid-Burgk, J., Densing, R., Krügel, E., Nett, H., Röser, H.P., Schäfer, F., Schwaab, G., van der Wal, P., Wattenbach, R.* **215**, 150

**Oph cloud**

The  $^{12}\text{CH}^+ / ^{13}\text{CH}^+$  ratio toward  $\zeta$  Ophiuchi

*Stahl, O., Wilson, T.L., Henkel, C., Appenzeller, I.* **221**, 321

**Orion Molecular Cloud**

Near-infrared images of young objects in the HH 1-2 and HH 3 regions

*Roth, M., Tapia, M., Rubio, M., Rodríguez, L.F.* **222**, 211

**Orion-KL**

The distribution of hot thermal methanol in Orion-KL

*Wilson, T.L., Johnston, K.J., Henkel, C., Menten, K.M.* **214**, 321

**Serpens**

Ice dust grains in the Serpens molecular cloud

*Eiroa, C., Hodapp, K.-W.* **210**, 345

**Serpens cloud**

The Serpens sources SVS 4 and FIRS 1: new results from infrared images

*Eiroa, C., Casali, M.M.* **223**, L17

A search for  $\text{H}_2\text{O}$  maser emission in the Serpens region

*Palla, F., Giovanardi, C.* **223**, 267

**Sgr A**

2-mm  $\text{H}_2\text{CO}$  emission in the Sgr A molecular complex at the Galactic Center

*Sandqvist, Aa.* **223**, 293

**Southern Coalsack**

The Southern Coalsack: extinction and distance

*Franco, G.A.P.* **215**, 119

Strömgren and  $\text{H}\beta$  photometry of stars earlier than G0 in the Southern Coalsack direction

*Franco, G.A.P.* **215**, 410; 77, 227

**W51-IRS2**

Monitoring of the SiO maser emission in W 51-IRS2: evidence for high velocity cloudlets ejected from young stars?

*Fuente, A., Martín-Pintado, J., Alcolea, J., Barcia, A.* **223**, 321

 **$\varrho$ Oph**

Radio measurements in the fields of  $\gamma$ -ray sources. III. The star formation region  $\varrho$ -Ophiuchi

*Schlickeiser, R., Harwit, M., Özel, M.E., Sieber, W., Younis, S.M., Schinckel, A.* **216**, 197

**Interstellar medium: dust**

On the electrostatic potential and charge of cosmic grains. III. Grains in diffuse and dense interstellar clouds

*Bel, N., Lafon, J.-P.J., Viala, Y.P., Loireux, E.* **208**, 331

Dust grains in M 104: an interpretation of the optical polarization in an external galaxy

*Matsumura, M., Seki, M.* **209**, 8

- Continuum observations of Sgr A at mm/submm wavelengths  
*Mezger, P.G., Zylka, R., Salter, C.J., Wink, J.E., Chini, R., Kreysa, E., Tuffs, R.* **209**, 337
- Large-scale behaviour of dust grains in a galactic environment  
*Barsella, B., Ferrini, F., Greenberg, J.M., Aiello, S.* **209**, 349
- Ice dust grains in the Serpens molecular cloud  
*Eiroa, C., Hodapp, K.-W.* **210**, 345
- A newborn Trapezium within a bipolar nebula  
*Neckel, T., Staude, H.J., Meisenheimer, K., Chini, R., Güsten, R.* **210**, 378
- Radio observations of CH in front of globular clusters and the galactic gas-to-dust ratio  
*Mattila, K.* **210**, 389
- Circumstellar dust around HR 4049: a critical test for theories of interstellar dust  
*Waters, L.B.F.M., Lamers, H.J.G.L.M., Snow, T.P., Mathlener, E., Trams, N.R., van Hoof, P.A.M., Waelkens, C., Seab, C.G., Stanga, R.* **211**, 208
- Potential of grains in astrophysical media: influence of the surface state (porosity)  
*Millet, J., Lafon, J.-P.J., Gonin, J.C.* **214**, 327
- CN 1-1: a bipolar type I planetary nebula  
*Bhatt, H.C.* **214**, 331
- The gas-to-dust ratio and the molecular hydrogen content in galactic cirrus clouds  
*Heithausen, A., Mebold, U.* **214**, 347
- The galactic emission in the 3.3  $\mu\text{m}$  aromatic feature. I. Observations  
*Giard, M., Pajot, F., Lamarre, J.M., Serra, G., Caux, E.* **215**, 92
- Extinction towards the Orion nebula derived from  $P\gamma/H\delta$  and  $[\text{SiII}]$  1.04  $\mu\text{m}/4071 \text{ \AA}$  line ratios  
*Greve, A., McKeith, C.D., Barnett, E.W., Götz, M.* **215**, 113
- The submillimeter continuum of active galaxies  
*Chini, R., Krügel, E., Kreysa, E., Gemünd, H.-P.* **216**, L5
- Physics of IR emission by interstellar PAH molecules  
*Léger, A., d'Hendecourt, L., Défourneau, D.* **216**, 148
- A coal model for the carriers of the unidentified IR bands  
*Papoular, R., Conard, J., Giuliano, M., Kister, J., Mille, G.* **217**, 204
- Large-scale properties of interstellar dust and gas in M33  
*Deul, E.R.* **218**, 78
- IRAS observations of the star-forming dark cloud ESO 210-6 A and the associated near-infrared source HH 47/46 IRS  
*Sahu, M., Sahu, K.C., Pottasch, S.R.* **218**, 221
- Dust ring around  $\lambda$  Orionis  
*Zhang, C.Y., Laureijs, R.J., Chlewicki, G., Clark, F.O., Wesselius, P.R.* **218**, 231
- Infrared spectroscopy of astrophysical ices: new insights in the photochemistry  
*Grim, R.J.A., Greenberg, J.M., de Groot, M.S., Baas, F., Schutte, W.A., Schmitt, B.* **218**, 341; **78**, 161
- Rotating  $\text{H}^{13}\text{CO}^+$  disk and corotating  $\text{H}^{12}\text{CO}^+$  lobes in the L1551 outflow source  
*Liljeström, T.* **219**, L19
- Diffuse interstellar extinction: the nature of the dust component  
*Perrin, J.-M., Sivan, J.-P.* **219**, 286
- Dust emission from an isolated interstellar cloud  
*Laureijs, R.J., Chlewicki, G., Clark, F.O., Wesselius, P.R.* **220**, 226
- The influence of temperature on the infrared spectrum of the coronene molecule  
*Bernard, J.P., d'Hendecourt, L.B., Léger, A.* **220**, 245
- Infrared observations of the Magellanic Clouds. I. The Small Magellanic Cloud  
*Schwering, P.B.W., Israel, F.P.* **220**, 343; **79**, 79
- Infrared observations of the Magellanic Clouds. II. The Large Magellanic Cloud  
*Schwering, P.B.W.* **220**, 343; **79**, 105
- 870 and 1300  $\mu\text{m}$  observations of radio quasars  
*Chini, R., Biermann, P.L., Kreysa, E., Gemünd, H.-P.* **221**, L3
- A high resolution millimetre and submillimetre study of W 3  
*Richardson, K.J., Sandell, G., White, G.J., Duncan, W.D., Krisciunas, K.* **221**, 95
- Multi-line observations and analysis of the Sharpless 247/252 gas complex  
*Kömpe, C., Joncas, G., Baudry, A., Wouterloot, J.G.A.* **221**, 295
- Infrared and radio recombination line observations of DR 21  
*Roelfsema, P.R., Goss, W.M., Geballe, T.R.* **222**, 247
- The discovery of interstellar carbon dioxide  
*d'Hendecourt, L.B., Jourdain de Muizon, M.* **223**, L5
- Observations of the submillimetre integrated galactic emission from the South Pole  
*Pajot, F., Gispert, R., Lamarre, J.M., Peyturaux, R., Pomerantz, M.A., Puget, J.L., Serra, G., Maurel, C., Pfeiffer, R., Renault, J.C.* **223**, 107
- The size distribution of dust particles in a dust-driven wind  
*Dominik, C., Gail, H.-P., Sedlmayr, E.* **223**, 227
- CO and IR in L1228: extended bipolar molecular outflow and strongly self-absorbed  $^{12}\text{CO}$  emission  
*Haikala, L.K., Laureijs, R.J.* **223**, 287
- Diffuse absorption bands and the 2175  $\text{\AA}$  feature: results from a sample of galactic stars  
*Benvenuti, P., Porceddu, I.* **223**, 329
- Small-scale structure in the DR 21/DR 21 (OH) region: a high resolution continuum study at millimetre and submillimetre wavelengths  
*Richardson, K.J., Sandell, G., Krisciunas, K.* **224**, 199
- Infrared photometry and spectrophotometry of SN 1987 A. I. March to October 1987 observations  
*Bouchet, P., Moneti, A., Slezak, E., Le Bertre, T., Manfroid, J.* **224**, 367; **80**, 379
- The line of sight towards AFGL 961: detection of the libration band of water ice at 13.6  $\mu\text{m}$   
*Cox, P.* **225**, L1
- A model for the far-IR emission of non-Seyfert Markarian galaxies  
*Xu, C., De Zotti, G.* **225**, 12
- Three-micron spectroscopy of three highly reddened field stars  
*Tapia, M., Persi, P., Roth, M., Ferrari-Toniolo, M.* **225**, 488
- Interstellar medium: extinction**
- Radio observations of CH in front of globular clusters and the galactic gas-to-dust ratio  
*Mattila, K.* **210**, 389
- Multiple close frequencies of the Delta Scuti star  $\theta^2$  Tauri. II. The second multisite campaign  
*Breger, M., Garrido, R., Huang Lin, Jiang Shi-yang, Guo Zi-he, Frueh, M., Paparo, M.* **214**, 209
- The gas-to-dust ratio and the molecular hydrogen content in galactic cirrus clouds  
*Heithausen, A., Mebold, U.* **214**, 347
- The Southern Coalsack: extinction and distance  
*Franco, G.A.P.* **215**, 119



- Strömgren and H $\beta$  photometry of stars earlier than G0 in the Southern Coalsack direction  
*Franco, G.A.P.* **215**, 410; 77, 227
- New *UBVRI* photoelectric photometry in the field of the open cluster NGC 2467  
*Feinstein, A., Vázquez, R.A.* **215**, 411; 77, 321
- The division of diffuse interstellar bands into families  
*Westerlund, B.E., Krelowski, J.* **218**, 216
- Arcs around SN 1987 A  
*Katz, J.I.* **218**, 289
- Estimation of stellar intrinsic colours, distances and colour excesses based on the Strömgren and H $\beta$  photometry of 804 B, A, and F stars in 10 selected areas  
*Franco, G.A.P.* **218**, 339; **78**, 105
- Diffuse interstellar extinction: the nature of the dust component  
*Perrin, J.-M., Sivan, J.-P.* **219**, 286
- Optical and infrared observations of the H II region S201  
*Mampaso, A., Phillips, J.P., Vilchez, J.M., Pişmiş, P., Riera, A.* **220**, 235
- The distance and structure of the Coalsack. I. Photometric data  
*Seidensticker, K.J.* **220**, 343; **79**, 61
- Interstellar extinction in the area of the North America and Pelican Nebula complex  
*Straižys, V., Goldberg, E.P., Meištas, E., Vansevičius, V.* **222**, 82
- High latitude molecular clouds: distances derived from accurate photometry  
*Franco, G.A.P.* **223**, 313
- Strömgren and H $\beta$  photometry of stars earlier than G0 in 5 areas containing high latitude molecular clouds  
*Franco, G.A.P.* **223**, 383; **80**, 127
- The distance and structure of the Coalsack. II. Analysis  
*Seidensticker, K.J., Schmidt-Kaler, Th.* **225**, 192
- The spectral energy distribution of early-type stars. II. The extinction law towards O-type stars  
*Thé, P.S., de Winter, D., Arens, M., Heijblok, M., Nieuwland, E.R.* **226**, 415; **81**, 115
- Interstellar medium: general**
- Extended X-ray emission from hot gas around the normal giant elliptical galaxy NGC 5846  
*Biermann, P.L., Kronberg, P.P., Schmutzler, T.* **208**, 22
- H 166  $\alpha$  emission from the southern galactic plane  
*Cersosimo, J.C., Azcarate, I.N., Hart, L., Colomb, F.R.* **208**, 239
- Dust grains in M 104: an interpretation of the optical polarization in an external galaxy  
*Matsumura, M., Seki, M.* **209**, 8
- Reduction of the Oort limit and the dark matter contribution to it  
*Boulares, A.* **209**, 21
- The role of refractive interstellar scintillation in the low frequency variability of extragalactic radio sources  
*Spangler, S., Fanti, R., Gregorini, L., Padrielli, L.* **209**, 315
- A search for interstellar and circumstellar C $_{60}$   
*Snow, T.P., Seab, C.G.* **213**, 291
- Elemental depletions in single interstellar clouds  
*Niedzielski, A., Krelowski, J.* **214**, 304
- Metallicity-dependence of radiative cooling in optically thin, hot plasmas  
*Böhringer, H., Hensler, G.* **215**, 147
- Distributed processes as contributors to the acceleration of cosmic rays  
*Giler, M., Osborne, J.L., Ptuskin, V.S., Szabelska, B., Wdowczyk, J., Wolfendale, A.W.* **217**, 311
- The division of diffuse interstellar bands into families  
*Westerlund, B.E., Krelowski, J.* **218**, 216
- Suprathermal ionization in evaporating clouds. Non-local electron distribution function  
*Ballet, J., Luciani, J.F., Mora, P.* **218**, 292
- Diffuse absorption bands and the 2175 Å feature: results from a sample of galactic stars  
*Benvenuti, P., Porceddu, I.* **223**, 329
- The influence of periodic external conditions on birth rates of O/B stars  
*Nepveu, M.* **224**, 86
- The influence of electron impact ionization on the distribution of interstellar helium in the inner heliosphere; possible consequences for determination of interstellar helium parameters  
*Rucinski, D., Fahr, H.J.* **224**, 290
- Solution topologies for cosmic ray modified galactic winds. I. Spherical symmetry  
*Zank, G.P.* **225**, 37
- The stellar-free emission component in galactic nuclei: at low-levels, evidence for shock ionization  
*Bonatto, C., Bica, E., Alloin, D.* **226**, 23
- Time-dependent corona models: coronae with accretion  
*Korevaar, P.* **226**, 209
- Interstellar medium: H II regions: general**
- A newborn Trapezium within a bipolar nebula  
*Neckel, T., Staude, H.J., Meisenheimer, K., Chini, R., Güsten, R.* **210**, 378
- A new radio continuum survey of the Magellanic Clouds at 1.4 GHz. II. The radio morphology, and thermal and nonthermal emission of the LMC  
*Klein, U., Wielebinski, R., Haynes, R.F., Malin, D.F.* **211**, 280
- A physical analysis of S II and C II layers in four molecular cloud edges: NGC 3576, NGC 6334, S 87, and S 88  
*Vallée, J.P.* **213**, 295
- The spatial relationship of OH and H $_2$ O masers  
*Forster, J.R., Caswell, J.L.* **213**, 339
- A radio recombination line maser in MWC 349  
*Martin-Pintado, J., Bachiller, R., Thum, C., Walmsley, C.M.* **215**, L13
- The distribution and kinematics of the ionized gas in the galactic centre region  
*Schwarz, U.J., Bregman, J.D., van Gorkom, J.H.* **215**, 33
- SNR expansion in a pre-existent cavity  
*Ciotti, L., D'Ercole, A.* **215**, 347
- Global photometric observations of 30 H II regions in the Small Magellanic Cloud  
*Copetti, M.V.F., Dottori, H.A.* **215**, 411; **77**, 327
- Time variation of type I H $_2$ O masers. II. A preliminary model for the time variation of H $_2$ O masers in ordinary, physically quiet environments  
*Peng, R.S.* **216**, 173
- The combined role of ionization and supernova explosions in the destruction of molecular clouds  
*Yorke, H.W., Tenorio-Tagle, G., Bodenheimer, P., Różyczka, M.* **216**, 207
- Photometry and spectroscopy of stars in northern H II regions  
*Forbes, D.* **217**, 393; **77**, 439

A CO  $J=2 \rightarrow 1$  survey of type I post-main-sequence nebulae

Phillips, J.P., Mampaso, A. **218**, 257

## Spatial and luminosity distributions of the ionized hydrogen in NGC 3992

Cepa, J., Beckman, J.E. **220**, 342; **79**, 41

## Infrared observations of the Magellanic Clouds. I. The Small Magellanic Cloud

Schwering, P.B.W., Israel, F.P. **220**, 343; **79**, 79

## Infrared observations of the Magellanic Clouds. II. The Large Magellanic Cloud

Schwering, P.B.W. **220**, 343; **79**, 105

## Water-vapor maser emission from bright, unassociated IRAS point sources

Scalise, E., Jr., Rodriguez, L.F., Mendoza-Torres, E. **221**, 105

## Time-variable recombination line emission in MWC 349

Martin-Pintado, J., Thum, C., Bachiller, R. **222**, L9

## Infrared and radio recombination line observations of DR 21

Roelfsema, P.R., Goss, W.M., Geballe, T.R. **222**, 247

## The discovery of interstellar carbon dioxide

d'Hendecourt, L.B., Jourdain de Muizon, M. **223**, L5

## Small-scale structure in the DR 21/DR 21 (OH) region: a high resolution continuum study at millimetre and submillimetre wavelengths

Richardson, K.J., Sandell, G., Krisciunas, K. **224**, 199

## Spectral evolutionary synthesis models of metal-poor star forming regions

Olofsson, K. **224**, 366; **80**, 317

## Observations at 90 and 142 GHz of nine extended galactic radio sources

Salter, C.J., Emerson, D.T., Steppe, H., Thum, C. **225**, 167

## Interstellar medium: H II regions: individual

## BGC 3603

## The galactic giant H II region NGC 3603

Melnick, J., Tapia, M., Terlevich, R. **213**, 89

## Dr 21

## Small-scale structure in the DR 21/DR 21 (OH) region: a high resolution continuum study at millimetre and submillimetre wavelengths

Richardson, K.J., Sandell, G., Krisciunas, K. **224**, 199

## G 34.3+0.15

## The "ultracompact hot core" of G 34.3+0.15: arcsecond resolution ammonia observations

Heaton, B.D., Little, L.T., Bishop, I.S. **213**, 148

## M 42

## Highly excited molecular hydrogen in M 42 and other nebulae

Hippelein, H.H., Münch, G. **213**, 323

## MWC 349

## A radio recombination line maser in MWC 349

Martin-Pintado, J., Bachiller, R., Thum, C., Walmsley, C.M. **215**, L13

## Time-variable recombination line emission in MWC 349

Martin-Pintado, J., Thum, C., Bachiller, R. **222**, L9

## NGC 3199

## The Wolf-Rayet nebula NGC 3199 — an interstellar snow plough?

Dyson, J.E., Ghanbari, J. **226**, 270

## North America Nebula

## Interstellar extinction in the area of the North America and Pelican Nebula complex

Straizys, V., Goldberg, E.P., Meištas, E., Vansevicius, V. **222**, 82

## Orion

Extinction towards the Orion nebula derived from  $P_{\gamma}/H\delta$  and  $[S II] 1.04 \mu m/4071 \text{ \AA}$  line ratios

Greve, A., McKeith, C.D., Barnett, E.W., Götz, M. **215**, 113

## Orion A

## High resolution H I observations of H II regions. I. Orion A

van der Werf, P.P., Goss, W.M. **224**, 209

## Pelican Nebula

## Interstellar extinction in the area of the North America and Pelican Nebula complex

Straizys, V., Goldberg, E.P., Meištas, E., Vansevicius, V. **222**, 82

## S 106

## Optical spectroscopy and near-infrared mapping of S 106

Riera, A., Mampaso, A., Phillips, J.P., Vilchez, J.M. **210**, 351

## CCD observations of bipolar nebulae. IV. S 106

Aspin, C., McLean, I.S., Schwarz, H.E., McCaughrean, M.J. **221**, 100

## S 119=HS240

## Is HS 240 an interstellar bubble?

Wisotzki, L., Wendker, H.J. **221**, 311

## S 201

## Optical and infrared observations of the H II region S 201

Mampaso, A., Phillips, J.P., Vilchez, J.M., Pişmiş, P., Riera, A. **220**, 235

## S 247

## Multi-line observations and analysis of the Sharpless 247/252 gas complex

Kömpe, C., Joncas, G., Baudry, A., Wouterloot, J.G.A. **221**, 295

## S 252

## Multi-line observations and analysis of the Sharpless 247/252 gas complex

Kömpe, C., Joncas, G., Baudry, A., Wouterloot, J.G.A. **221**, 295

## Sgr A

## Continuum observations of Sgr A at mm/submm wavelengths

Mezger, P.G., Zylka, R., Salter, C.J., Wink, J.E., Chini, R., Kreysa, E., Tuffs, R. **209**, 337

## Sh 2-252

## Further observations of stars associated with the Sharpless H II region Sh 2-252, and of the Herbig A0e star Sh 2-252b

Chavarría-K., C., Leitherer, C., de Lara, E., Sánchez, O., Zickgraf, F.-J. **215**, 51

## W 3

- A high resolution millimetre and submillimetre study of W 3  
*Richardson, K.J., Sandell, G., White, G.J., Duncan, W.D., Krisciunas, K.* **221**, 95

## W 49 N

- Time variation of type I H<sub>2</sub>O masers. I. Long term flux density variation of the W 49 N H<sub>2</sub>O maser  
*Peng, R.S.* **216**, 165  
 W 49 N water maser: spectral atlas of time variability during 1981–85  
*Liljeström, T., Mattila, K., Toriseva, M., Anttila, R.* **220**, 342; 79, 19

## Interstellar medium: kinematics and dynamics of

- Carbon monoxide along the line of sight to galactic center infrared sources  
*Geballe, T.R., Baas, F., Wade, R.* **208**, 255  
 An extended outflow in L 673  
*Armstrong, J.T., Winnewisser, G.* **210**, 373  
 The high excitation extended gas in NGC 1068: a probe to the central hidden absorbing torus  
*Bergeron, J., Petitjean, P., Durret, F.* **213**, 61  
 Capture of field stars by molecular clouds  
*Bhatt, H.C.* **213**, 299  
 High resolution spectroscopy of the planetary nebula Hubble 12  
*Miranda, L.F., Solf, J.* **214**, 353  
 Erratum: A multi-line NH<sub>3</sub> study of the M 17 SW molecular cloud  
*Güsten, R., Fiebig, D.* **215**, 218  
 The structure of the Small Magellanic Cloud  
*Martin, N., Maurice, E., Lequeux, J.* **215**, 219  
 A CO  $J=2\rightarrow 1$  survey of type I post-main-sequence nebulae  
*Phillips, J.P., Mampaso, A.* **218**, 257  
 The effect of gas removal on the dynamical evolution of young stellar clusters  
*Verschueren, W., David, M.* **219**, 105  
 Dynamical mixing in molecular clouds  
*Chièze, J.P., Pineau des Forêts, G.* **221**, 89  
 A high resolution millimetre and submillimetre study of W 3  
*Richardson, K.J., Sandell, G., White, G.J., Duncan, W.D., Krisciunas, K.* **221**, 95  
 Is HS 240 an interstellar bubble?  
*Wisotzki, L., Wendker, H.J.* **221**, 311  
 The Wolf-Rayet nebula NGC 3199 – an interstellar snow plough?  
*Dyson, J.E., Ghanbari, J.* **226**, 270

## Interstellar medium: magnetic field

- The magnetic field of NGC 6946  
*Harnett, J.I., Beck, R., Buczkowski, U.R.* **208**, 32  
 Two-dimensional isothermal magnetostatic equilibria in a gravitational field. I. Unsheared equilibria  
*Amari, T., Aly, J.J.* **208**, 361  
 A new radio continuum survey of the Magellanic Clouds at 1.4 GHz. II. The radio morphology, and thermal and nonthermal emission of the LMC  
*Klein, U., Wielebinski, R., Haynes, R.F., Malin, D.F.* **211**, 280  
 Configuration of large-scale magnetic fields in spiral galaxies  
*Krashennikova (Baryshnikova), Ruzmaikin, A., Sokoloff, D., Shukurov, A.* **213**, 19

Observable parameters of spiral galaxies and galactic magnetic fields

- Starchenko, S.V., Shukurov, A.M.* **214**, 47  
 Strong magnetic fields in interstellar H<sub>2</sub>O maser clumps  
*Fiebig, D., Güsten, R.* **214**, 333  
 Polarized radio emission from NGC 4945  
*Harnett, J.I., Haynes, R.F., Klein, U., Wielebinski, R.* **216**, 39  
 The magnetic field structures in two nearby spiral galaxies. I. The axisymmetric spiral magnetic field in IC 342  
*Krause, M., Hummel, E., Beck, R.* **217**, 4  
 The magnetic field structures in two nearby spiral galaxies. II. The bisymmetric spiral magnetic field in M 81  
*Krause, M., Beck, R., Hummel, E.* **217**, 17  
 Magnetised molecular cloud edges  
*Vallée, J.P.* **224**, 191  
 Zeeman splitting in interstellar molecules  
*Bel, N., Leroy, B.* **224**, 206  
 Numerical studies on magnetic braking of interstellar clouds  
*Dorfi, E.* **225**, 507

## Interstellar medium: molecules

- State selective excitation of O III by charge transfer of O IV with H  
*Gargaud, M., McCarroll, R., Opradolce, L.* **208**, 251  
 C<sub>3</sub>H<sub>2</sub> observations in dense dark clouds  
*Cox, P., Walmsley, C.M., Güsten, R.* **209**, 382  
 CO outflow and properties of the molecular gas around the far-infrared point source IRAS 04325-1419 in Lynds 1642  
*Liljeström, T., Mattila, K., Friberg, P.* **210**, 337  
 An extended outflow in L 673  
*Armstrong, J.T., Winnewisser, G.* **210**, 373  
 Radio observations of CH in front of globular clusters and the galactic gas-to-dust ratio  
*Mattila, K.* **210**, 389  
 Molecular clouds in irregular galaxies. I. An ultramassive complex in NGC 3077?  
*Becker, R., Schilke, P., Henkel, C.* **211**, L19  
 High spectral-resolution CO observations of NGC 6814 and NGC 7793  
*Brand, J., Wouterloot, J.G.A., Becker, R., Stirpe, G.M.* **211**, 315  
 Collision of a high-velocity cloud with a dust cloud in the galactic halo  
*Rohfs, R., Herbstmeier, U., Mebold, U., Winnberg, A.* **211**, 402  
 A refined study of the rate of the  $N^+ + H_2 \rightarrow NH^+ + H$  reaction under interstellar conditions: implications for NH<sub>3</sub> production  
*Galloway, E.T., Herbst, E.* **211**, 413  
 Observations of CO ( $J=7-6$ ) in star-forming regions  
*Krügel, E., Densing, R., Nett, H., Röser, H.P., Schäfer, F., Schmid-Burgk, J., Schwaab, G., van der Wal, P., Wattenbach, R.* **211**, 419  
 Proton transfer reactions of H<sub>3</sub><sup>+</sup> with molecular neutrals at 30 K  
*Marquette, J.B., Rebrion, C., Rowe, B.R.* **213**, L29  
 The "ultracompact hot core" of G 34.3+0.15: arcsecond resolution ammonia observations  
*Heaton, B.D., Little, L.T., Bishop, I.S.* **213**, 148  
 A search for interstellar and circumstellar C<sub>60</sub>  
*Snow, T.P., Seab, C.G.* **213**, 291  
 The L 1551 IRS 5 CO bipolar outflow: acceleration and origin  
*Fridlund, C.V.M., Sandqvist, A., Nordh, H.L., Olofsson, G.* **213**, 310

- Highly excited molecular hydrogen in M 42 and other nebulae  
*Hipplein, H.H., Münch, G.* **213**, 323
- The spatial relationship of OH and H<sub>2</sub>O masers  
*Forster, J.R., Caswell, J.L.* **213**, 339
- Photo-thermo-dissociation. I. A general mechanism for destroying molecules  
*Léger, A., Boissel, P., Désert, F.X., d'Hendecourt, L.* **213**, 351
- The distribution of hot thermal methanol in Orion-KL  
*Wilson, T.L., Johnston, K.J., Henkel, C., Menten, K.M.* **214**, 321
- CN 1-1: a bipolar type I planetary nebula  
*Bhatt, H.C.* **214**, 331
- Strong magnetic fields in interstellar H<sub>2</sub>O maser clumps  
*Fiebig, D., Güsten, R.* **214**, 333
- The relative importance of collisional and chemical pumping and radiative transfer effects in cosmic OH sources  
*Piehler, G., Kegel, W.H.* **214**, 339
- The gas-to-dust ratio and the molecular hydrogen content in galactic cirrus clouds  
*Heithausen, A., Mebold, U.* **214**, 347
- CO observations of IRAS sources in Orion and Cepheus  
*Wouterloot, J.G.A., Henkel, C., Walmsley, C.M.* **215**, 131
- Extended CO ( $J=7-6$ ) emission from Orion Molecular Cloud 1: hot ambient gas, two hot-outflow sources  
*Schmid-Burgk, J., Densing, R., Krügel, E., Nett, H., Röser, H.P., Schäfer, F., Schwaab, G., van der Wal, P., Wattenbach, R.* **215**, 150
- Erratum:* A multi-line NH<sub>3</sub> study of the M 17SW molecular cloud  
*Güsten, R., Fiebig, D.* **215**, 218
- CO observations in NGC 1068: physical conditions of the molecular clouds and star formation  
*Planesas, P., Gómez-González, J., Martín-Pintado, J.* **216**, 1
- Physics of IR emission by interstellar PAH molecules  
*Léger, A., d'Hendecourt, L., Défourneau, D.* **216**, 148
- Time variation of type I H<sub>2</sub>O masers. I. Long term flux density variation of the W 49 N H<sub>2</sub>O maser  
*Peng, R.S.* **216**, 165
- Time variation of type I H<sub>2</sub>O masers. II. A preliminary model for the time variation of H<sub>2</sub>O masers in ordinary, physically quiet environments  
*Peng, R.S.* **216**, 173
- A CO survey of the Southern Coalsack  
*Nyman, L.-Å., Bronfman, L., Thaddeus, P.* **216**, 185
- The lowest two electronic states of the hexatrienyl radical: C<sub>6</sub>H  
*Pauzat, F., Ellinger, Y.* **216**, 305
- A CO  $J=2 \rightarrow 1$  survey of type I post-main-sequence nebulae  
*Phillips, J.P., Mampaso, A.* **218**, 257
- Infrared spectroscopy of astrophysical ices: new insights in the photochemistry  
*Grim, R.J.A., Greenberg, J.M., de Groot, M.S., Baas, F., Schutte, W.A., Schmitt, B.* **218**, 341; **78**, 161
- Abundant molecular gas in the starburst galaxy IRAS 0833+652  
*Wiklund, T.* **219**, L11
- Rotating H<sup>13</sup>CO<sup>+</sup> disk and corotating H<sup>12</sup>CO<sup>+</sup> lobes in the L1551 outflow source  
*Liljeström, T.* **219**, L19
- <sup>12</sup>CO ( $J=1-0$ ) and ( $J=2-1$ ) mapping of the  $\zeta$  Ophiuchi diffuse cloud  
*Le Boulot, J., Gérin, M., Pérault, M.* **219**, 279
- HCN and HNC observations towards dark clouds  
*Harju, J.* **219**, 293
- Dense molecular gas in galaxies: HCN, HCO<sup>+</sup>, and CS in M82 and NGC 253  
*Nguyen-Q-Rieu, Nakai, N., Jackson, J.M.* **220**, 57
- The production of C<sub>n</sub>O, HC<sub>n</sub>O, and H<sub>2</sub>C<sub>n</sub>O molecules in dense interstellar clouds  
*Adams, N.G., Smith, D., Giles, K., Herbst, E.* **220**, 269
- W 49 N water maser: spectral atlas of time variability during 1981-85  
*Liljeström, T., Mattila, K., Toriseva, M., Anttila, R.* **220**, 342; **79**, 19
- Dynamical mixing in molecular clouds  
*Chièze, J.P., Pineau des Forêts, G.* **221**, 89
- Multi-line observations and analysis of the Sharpless 247/252 gas complex  
*Kömpe, C., Joncas, G., Baudry, A., Wouterloot, J.G.A.* **221**, 295
- The <sup>12</sup>CH<sup>+</sup>/<sup>13</sup>CH<sup>+</sup> ratio toward  $\zeta$  Ophiuchi  
*Stahl, O., Wilson, T.L., Henkel, C., Appenzeller, I.* **221**, 321
- The chemistry of silicon in dense interstellar clouds  
*Herbst, E., Millar, T.J., Wlodek, S., Bohme, D.K.* **222**, 205
- The detection of CN and HNC mm-wave absorption lines in spiral-arm gas clouds  
*Nyman, L.-Å., Millar, T.J.* **222**, 231
- The discovery of interstellar carbon dioxide  
*d'Hendecourt, L.B., Jourdain de Muizon, M.* **223**, L5
- High signal/noise <sup>13</sup>CO observations of the bipolar outflow in L 1551  
*Fridlund, C.V.M., White, G.J.* **223**, L13
- Dense gas in nearby galaxies. I. Distribution, kinematics and multilevel studies of CS  
*Mauersberger, R., Henkel, C.* **223**, 79
- The high density molecular cores near L1551-IRS5 and B335-FIR  
*Menten, K.M., Harju, J., Olano, C.A., Walmsley, C.M.* **223**, 258
- CO and IR in L 1228: extended bipolar molecular outflow and strongly self-absorbed <sup>12</sup>CO emission  
*Haikala, L.K., Laureijs, R.J.* **223**, 287
- 2-mm H<sub>2</sub>CO emission in the Sgr A molecular complex at the Galactic Center  
*Sandqvist, Aa.* **223**, 293
- Monitoring of the SiO maser emission in W 51-IRS2: evidence for high velocity cloudlets ejected from young stars?  
*Fuente, A., Martín-Pintado, J., Alcolea, J., Barcia, A.* **223**, 321
- Wavelengths, oscillator strengths and transition probabilities of the H<sub>2</sub> molecule for Lyman and Werner systems  
*Abgrall, H., Roueff, E.* **223**, 378; **79**, 313
- A search for HCOCN in molecular clouds  
*Gerin, M., Combes, F., Encrenaz, P., Turner, B., Wootten, A., Bogey, M., Destombes, J.L.* **224**, L24
- Distribution of gas and star-forming regions in M 171: Three galaxies?  
*Casoli, F., Combes, F., Augarde, R., Figon, P., Martin, J.M.* **224**, 31
- Zeeman splitting in interstellar molecules  
*Bel, N., Leroy, B.* **224**, 206
- IRAS sources beyond the solar circle. I. CO observations  
*Wouterloot, J.G.A., Brand, J.* **224**, 362; **80**, 149
- The molecular cloud content of early type galaxies. I. Detections and global properties  
*Wiklund, T., Henkel, C.* **225**, 1



- The line of sight towards AFGL 961: detection of the libration band of water ice at 13.6  $\mu\text{m}$   
*Cox, P.* **225**, L1
- Optical depth of molecular gas in starburst galaxies: Is M 82 the prototype?  
*Verter, F., Rickard, L.J.* **225**, 27
- The interpretation of correlations between observed parameters of molecular clouds  
*Kegel, W.H.* **225**, 517
- Dense gas in nearby galaxies. II. CS emission from spiral galaxies  
*Mauersberger, R., Henkel, C., Wilson, T.L., Harju, J.* **226**, L5
- Interstellar medium: planetary nebulae**; see Planetary nebulae
- Interstellar medium: radiation field**
- Dynamical Voronoi tessellation. I. The two-dimensional case  
*Zaninetti, L.* **224**, 345
- Interstellar medium: reflection nebulae: general**
- Photo-thermo-dissociation. I. A general mechanism for destroying molecules  
*Léger, A., Boissel, P., Désert, F.X., d'Hendecourt, L.* **213**, 351
- A coal model for the carriers of the unidentified IR bands  
*Papoular, R., Conard, J., Giuliano, M., Kister, J., Mille, G.* **217**, 204
- Distributed processes as contributors to the acceleration of cosmic rays  
*Giler, M., Osborne, J.L., Ptuskin, V.S., Szabelska, B., Wdowczyk, J., Wolfendale, A.W.* **217**, 311
- Arcs around SN 1987 A  
*Katz, J.I.* **218**, 289
- CCD observations of bipolar nebulae. IV. S 106  
*Aspin, C., McLean, I.S., Schwarz, H.E., McCaughrean, M.J.* **221**, 100
- Near-infrared morphology of protoplanetary nebulae: the icy dust torus of Minkowski's Footprint (M1-92)  
*Eiroa, C., Hodapp, K.-W.* **223**, 271
- Interstellar medium: reflection nebulae: individual**
- HD 26676**
- The reflection nebula around HD 26676  
*Centurion, M., Vladilo, G.* **218**, 243
- NS 14**
- A newborn Trapezium within a bipolar nebula  
*Neckel, T., Staude, H.J., Meisenheimer, K., Chini, R., Güsten, R.* **210**, 378
- 1548 C 27**
- The nature of the cometary nebula 1548 C 27  
*Vilchez, J.M., Mampaso, A., Riera, A., Phillips, J.P.* **213**, 303
- Interstellar medium: shells**; see Interstellar medium: bubbles
- Interstellar medium: supernova remnants**; see Supernovae and supernova remnants
- Lines: formation**; see also: Radiation transfer
- Formation of Ca II lines in active galactic nuclei  
*Joly, M.* **208**, 47
- Studies of symbiotic stars. I. Location of the UV emitting regions in 6 S-type systems monitored by the IUE satellite  
*Munari, U.* **208**, 63
- Non-LTE line formation in early B and late O stars. IV. Singly ionized nitrogen  
*Becker, S.R., Butler, K.* **209**, 244
- Synthetic optical and ultraviolet spectra of stationary accretion disks  
*la Dous, C.* **211**, 131
- Linear polarization of the hydrogen H $\alpha$  line in filaments. I. Theoretical investigation  
*Bommier, V., Landi Degl'Innocenti, E., Sahal-Bréchet, S.* **211**, 230
- Emission spectra of weakly photoionized media in active nuclei of galaxies  
*Collin-Souffrin, S., Dumont, A.M.* **213**, 29
- Snapshots of evolving model planetary nebulae  
*Stasińska, G.* **213**, 274
- Highly excited molecular hydrogen in M 42 and other nebulae  
*Hippelein, H.H., Münch, G.* **213**, 323
- Erratum: Fe II References Catalogues (Ser. 77, No. 1, 155)  
*Viotti, R., Baratta, G.B.* **217**, 394; 77, 155
- Asymptotic analysis of resonance polarization and escape probability approximations  
*Faurobert-Scholl, M., Frisch, H.* **219**, 338
- Stokes V asymmetry and shift of spectral lines  
*Grossmann-Doerth, U., Schüssler, M., Solanki, S.K.* **221**, 338
- The chromospheric emission from acoustically heated stellar atmospheres  
*Ulmschneider, P.* **222**, 171
- The probability of detecting absorption features in gamma-ray burst spectra  
*Melia, F.* **223**, L9
- Behaviour of the O I triplet at  $\lambda$  7773. III. Am stars  
*van 't Veer-Menneret, C., Faraggiana, R., Gerbaldi, M., Castelli, F., Burkhardt, C., Floquet, M.* **224**, 171
- Oscillator strengths and damping constants from the solar spectrum at  $\lambda\lambda$  830–870 nm  
*Erdelyi-Mendes, M., Barbuy, B.* **224**, 363; **80**, 229
- Optical depth of molecular gas in starburst galaxies: Is M 82 the prototype?  
*Verter, F., Rickard, L.J.* **225**, 27
- Non-LTE model atmosphere calculations with approximate lambda operators: application of tridiagonal operators  
*Werner, K.* **226**, 265
- Lines: identification**
- Raman scattering as a diagnostic possibility in astrophysics  
*Nussbaumer, H., Schmid, H.M., Vogel, M.* **211**, L27
- Identification of the emission bands at  $\lambda\lambda$  6830, 7088  
*Schmid, H.M.* **211**, L31
- Synthetic optical and ultraviolet spectra of stationary accretion disks  
*la Dous, C.* **211**, 131
- Physics of IR emission by interstellar PAH molecules  
*Léger, A., d'Hendecourt, L., Défourneau, D.* **216**, 148
- A comparative study of Na I and Ca II infrared lines in stars, star clusters and galaxy nuclei: an alternative to the dwarf-enriched population  
*Alloin, D., Bica, E.* **217**, 57
- Element identifications in IUE spectra of chemically peculiar stars: the Pt-Au-Hg sequence  
*Fuhrmann, K.* **217**, 391; 77, 345

Infrared spectroscopy of astrophysical ices: new insights in the photochemistry

Grim, R.J.A., Greenberg, J.M., de Groot, M.S., Baas, F., Schutte, W.A., Schmitt, B. **218**, 341; **78**, 161

The IUE spectral atlas of two normal B stars:  $\pi$  Ceti and  $\nu$  Capricorni (125-198 nm)

Artru, M.-C., Borsenberger, J., Lanz, T. **223**, 381; **80**, 17

The IUE-UV spectrum of the CP2 star HR 465

Fuhrmann, K. **224**, 367; **80**, 399

### Lines: profile

Mapping stellar surfaces by Doppler imaging: technique and application

Rice, J.B., Wehlau, W.H., Khokhlova, V.L. **208**, 179

Carbon monoxide along the line of sight to galactic center infrared sources

Geballe, T.R., Baas, F., Wade, R. **208**, 255

Power-law dependence of the pressure broadening of spectral lines on temperature

Bielski, A., Bobkowski, R., Szudy, J. **208**, 357

Broadening of iron resonance lines in X-ray burst spectra

Madej, J. **209**, 226

Lifetimes and transition probabilities in V II and the solar abundance of vanadium

Biémont, E., Grevesse, N., Faires, L.M., Marsden, G., Lawler, J.E., Whaling, W. **209**, 391

Pulsating CP2 stars. I.  $\alpha$  Circini (HD 128898)

Schneider, H., Weiss, W.W. **210**, 147

Synthetic optical and ultraviolet spectra of stationary accretion disks

la Dous, C. **211**, 131

Broad emission line profiles in Seyfert-1 galaxies: [O III]-wings from a transition zone

van Groningen, E., de Bruyn, A.G. **211**, 293

Emission line variation in the Seyfert galaxy Fairall 9 and the presence of broad [O III] emission

Stirpe, G.M., van Groningen, E., de Bruyn, A.G. **211**, 310

A search for electron-scattered wings in H  $\alpha$  in Seyfert-1 galaxies

van Groningen, E., van Weeren, N. **211**, 318

Shock phenomena in  $\beta$  Cephei stars

Crowe, R., Gillet, D. **211**, 365

The internal magnetic field distribution and the diameters of solar magnetic elements

Zayer, I., Solanki, S.K., Stenflo, J.O. **211**, 463

The influence of relativistic kinematics on the asymmetry of spectral line profiles and the observed asymmetries in AGN's

Mediavilla, E., Inertis, F.M. **214**, 79

Long-term and mid-term spectroscopic variations of the Be-shell star HD 184279 (V 1294 Aquilae). II. Towards a model

Ballereau, D., Chauville, J. **214**, 285

Shock phenomena in the atmosphere of the RV Tauri star, R Scuti

Gillet, D., Duquennoy, A., Bouchet, P., Gouffes, C. **215**, 316

Some comments on the methods for measuring magnetic fields in late-type stars

Landolfi, M., Landi Degl'Innocenti, M., Landi Degl'Innocenti, E. **216**, 113

Estimates of Stark width along a homologous sequence

Dimitrijević, M.S., Popović, M.M. **217**, 201

High resolution solar bidimensional spectroscopy with a Universal Birefringent Filter in tandem with a Fabry-Perot interferometer

Bonaccini, D., Cavallini, F., Ceppatelli, G., Righini, A. **217**, 368

Studies of late-type binaries. III. A spectroscopic study of V 566 Ophiuchi

Hill, G., Fisher, W.A., Holmgren, D. **218**, 152

Theoretical aspects of two  $\alpha$ -distributions in accretion disks

Adam, J., Störzer, H., Duschl, W.J. **218**, 205

Stark broadening of He II lines

Schöning, T., Butler, K. **218**, 339; **78**, 51

An analysis of high resolution spectra of the B[e]-stars CPD-52°9243 and MWC 300

Winkler, H., Wolf, B. **219**, 151

Stark broadening of He II lines and new results in astrophysical spectroscopy

Schöning, T., Butler, K. **219**, 326

Intermediate resolution spectra of quasars with  $z > 2$

Ulrich, M.-H. **220**, 71

Absolute fluxes for Supernova 1987A. II. Days 51 to 157

Hanuschik, R.W., Thimm, G., Seidensticker, K.J. **220**, 153

New developments in the discrete ordinate method for the resolution of the radiative transfer equation

Ben Jaffel, L., Vidal-Madjar, A. **220**, 306

The winds of O-stars. II. The terminal velocities of stellar winds of O-type stars

Groenewegen, M.A.T., Lamers, H.J.G.L.M., Pauldrach, A.W.A. **221**, 78

A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. II. Results and discussion

Baade, D. **222**, 200

Lifetimes in Sm II and the solar abundance of samarium

Biémont, E., Grevesse, N., Hannaford, P., Lowe, R.M. **222**, 307

The winds of O-stars. I. An analysis of the UV line profiles with the SEI method

Groenewegen, M.A.T., Lamers, H.J.G.L.M. **223**, 378; **79**, 359

A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. I. Observations and measurements

Baade, D. **223**, 380; **79**, 423

Pulsating CP2 stars. II.  $\gamma$  Equulei (HD 201601) and  $\beta$  Coronae Borealis (HD 137909)

Weiss, W.W., Schneider, H. **224**, 101

The origin and the diagnostic capabilities of the Stokes  $V$  asymmetry observed in solar faculae and the network

Solanki, S.K. **224**, 225

Oscillator strengths and damping constants from the solar spectrum at  $\lambda\lambda$  830-870 nm

Erdelyi-Mendes, M., Barby, B. **224**, 363; **80**, 229

Emission-line profiles of two T Tauri stars with weak non-photospheric continua

Appenzeller, I., Wagner, S.J. **225**, 432

Shock waves of large amplitude in the atmospheres of RR Lyrae stars?

Gillet, D., Burki, G., Crowe, R.A. **225**, 445

Zeeman-Doppler imaging of active stars. I. Basic principles

Semel, M. **225**, 456

Zeeman-Doppler imaging of active stars. II. Numerical simulation and first observational results

Donati, J.-F., Semel, M., Praderie, F. **225**, 467

Variations in the chromospheric Ca II lines of  $\alpha$  Orionis

Toussaint, F., Reimers, D. **226**, L17

**Luminosity function, mass function**

Distribution and luminosity function of OB stars in M31

*Berkhuijsen, E.M., Humphreys, R.M.* **214**, 68

The luminosity distribution of population II red giants

*Castellani, V., Chieffi, A., Norci, L.* **216**, 62

UBV photometry and the structure of the galactic cluster NGC 2516

*Dachs, J., Kabus, H.* **218**, 338; **78**, 25

Scale-invariant matter distribution in the universe. I. Counts in cells

*Balian, R., Schaeffer, R.* **220**, 1

Two more very massive stars resolved

*Heydari-Malayeri, M., Magain, P., Remy, M.* **222**, 41

White dwarf luminosity functions calculated from models of galactic evolution and the age of the galactic disk

*Yuan, J.W.* **224**, 108

The number of evolved early-type close binaries in the Galaxy

*Meurs, E.J.A., van den Heuvel, E.P.J.* **226**, 88

**Magellanic Clouds:** see Galaxies: Magellanic Clouds

**Magnetic field**

Two-dimensional isothermal magnetostatic equilibria in a gravitational field. I. Unsheared equilibria

*Amari, T., Aly, J.J.* **208**, 361

Overstability of magnetic flux tubes in the Eddington approximation

*Massaglia, S., Bodo, G., Rossi, P.* **209**, 399

Constraints on integrated nuclear rotation measures in core-dominated active galactic nuclei

*O'Dea, C.P.* **210**, 35

Time-dependent MHD simulations for cometary plasmas

*Schmidt-Voigt, M.* **210**, 433

Linearly polarized radioemission from the anomalous arms in NGC 4258 (M 106)

*Hummel, E., Krause, M., Lesch, H.* **211**, 266

Configuration of large-scale magnetic fields in spiral galaxies

*Krashennikova (Baryshnikova), Ruzmaikin, A., Sokoloff, D., Shukurov, A.* **213**, 19

The stability of nonlinear dynamos and the limited role of kinematic growth rates

*Brandenburg, A., Krause, F., Meinel, R., Moss, D., Tuominen, I.* **213**, 411

Turbulent transport of magnetic fields. IV. Damping of the mean field  $\langle B \rangle$  in  $\alpha^2$ -dynamos with  $\alpha \propto \cos \theta$

*van Geffen, J.H.G.M., Hoyng, P.* **213**, 429

Observable parameters of spiral galaxies and galactic magnetic fields

*Starchenko, S.V., Shukurov, A.M.* **214**, 47

Strong magnetic fields in interstellar H<sub>2</sub>O maser clumps

*Fiebig, D., Güsten, R.* **214**, 333

Some comments on the methods for measuring magnetic fields in late-type stars

*Landolfi, M., Landi Degl'Innocenti, M., Landi Degl'Innocenti, E.* **216**, 113

Ring currents and poloidal magnetic fields in nuclear regions of galaxies

*Lesch, H., Crusius, A., Schlickeiser, R., Wielebinski, R.* **217**, 99

The probability of detecting absorption features in gamma-ray burst spectra

*Melia, F.* **223**, L9

Optical polarization of the M 87 jet

*Fraix-Burnet, D., Le Borgne, J.-F., Nieto, J.-L.* **224**, 17

A generalization of the Woltjer minimum-energy principle

*Dixon, A.M., Berger, M.A., Browning, P.K., Priest, E.R.* **225**, 156

Synchrotron pair cascades in strong magnetic fields

*Baring, M.G.* **225**, 260

Collective plasma processes in extragalactic radio sources

*Lesch, H., Appl, S., Camenzind, M.* **225**, 341

Solutions for the equilibrium of static isothermal gas clouds with poloidal magnetic fields

*Baureis, P., Ebert, R., Schmitz, F.* **225**, 405

Numerical studies on magnetic braking of interstellar clouds

*Dorfi, E.* **225**, 507

**Magnetohydrodynamics;** see Hydromagnetics, plasmas

**Masers**

Fundamental frequencies and small divisors in the orbits of the outer planets

*Nobili, A.M., Milani, A., Carpino, M.* **210**, 313

$v = 3, J = 1 - 0$  SiO maser emission from evolved stars

*Alcolea, J., Bujarrabal, V., Gallego, J.D.* **211**, 187

OH properties of Mira stars

*Sivagnanam, P., Le Squeren, A.M., Foy, F., Tran Minh, F.* **211**, 341

The spatial relationship of OH and H<sub>2</sub>O masers

*Forster, J.R., Caswell, J.L.* **213**, 339

Strong magnetic fields in interstellar H<sub>2</sub>O maser clumps

*Fiebig, D., Güsten, R.* **214**, 333

The relative importance of collisional and chemical pumping and radiative transfer effects in cosmic OH sources

*Piehler, G., Kegel, W.H.* **214**, 339

A new circumstellar maser: <sup>30</sup>SiO

*Barcia, A., Alcolea, J., Bujarrabal, V.* **215**, L9

A radio recombination line maser in MWC 349

*Martín-Pintado, J., Bachiller, R., Thum, C., Walmsley, C.M.* **215**, L13

Time variation of type I H<sub>2</sub>O masers. I. Long term flux density variation of the W 49 N H<sub>2</sub>O maser

*Peng, R.S.* **216**, 165

Time variation of type I H<sub>2</sub>O masers. II. A preliminary model for the time variation of H<sub>2</sub>O masers in ordinary, physically quiet environments

*Peng, R.S.* **216**, 173

OH maser emission from young planetary nebulae

*Zijlstra, A.A., te Lintel Hekkert, P., Pottasch, S.R., Caswell, J.L., Ratag, M., Habing, H.J.* **217**, 157

Search for water vapor masers in the direction of IRAS sources associated with H II regions and molecular clouds

*Braz, M.A., Scalise, Jr., E., Gregorio Hetem, J.C., Monteiro do Vale, J.L., Gaylard, P.* **217**, 393; **77**, 465

Discovery of strong maser emission from HCN in IRC+10216

*Lucas, R., Cernicharo, J.* **218**, L20

A catalogue of stellar 1612 MHz maser sources

*te Lintel Hekkert, P., Versteeg-Hensel, H.A., Habing, H.J., Wiertz, M.* **219**, 364; **78**, 399

W 49 N water maser: spectral atlas of time variability during 1981-85

*Liljeström, T., Mattila, K., Toriseva, M., Anttila, R.* **220**, 342; **79**, 19

- Water-vapor maser emission from bright, unassociated IRAS point sources  
*Scalise, E., Jr., Rodriguez, L.F., Mendoza-Torres, E.* **221**, 105
- Multi-line observations and analysis of the Sharpless 247/252 gas complex  
*Kömpe, C., Joncas, G., Baudry, A., Wouterloot, J.G.A.* **221**, 295
- Time-variable recombination line emission in MWC 349  
*Martin-Pintado, J., Thum, C., Bachiller, R.* **222**, L9
- Efficiency of 1612 MHz maser emission from OH/IR stars  
*Röttgering, H.J.A.* **222**, 125
- A search for H<sub>2</sub>O maser emission in the Serpens region  
*Palla, F., Giovanardi, C.* **223**, 267
- Monitoring of the SiO maser emission in W51-IRS2: evidence for high velocity cloudlets ejected from young stars?  
*Fuente, A., Martin-Pintado, J., Alcolea, J., Barcia, A.* **223**, 321
- A reference catalogue of maser and thermal emission circumstellar SiO molecules  
*Engels, D., Hesse, A.* **226**, 421; **81**, 323
- Mass function**; see Luminosity function, mass function
- Meteors, meteorites**
- Accurate solar photospheric abundances: a comparison with meteorite data  
*Booth, A.J.* **208**, 287
- The structure of the molecular gas in the young planetary nebula NGC 2346  
*Bachiller, R., Planesas, P., Martin-Pintado, J., Bujarrabal, V., Tafalla, M.* **210**, 366
- Molecular clouds in irregular galaxies. I. An ultramassive complex in NGC 3077?  
*Becker, R., Schilke, P., Henkel, C.* **211**, L19
- Detection of CO(1 $\rightarrow$ 0) emission from infrared quasars and luminous Seyfert galaxies  
*Sanders, D.B., Scoville, N.Z., Zensus, A., Soifer, B.T., Wilson, T.L., Zylka, R., Steppe, H.* **213**, L5
- The Swedish-ESO Submillimetre Telescope (SEST)  
*Booth, R.S., Delgado, G., Hagström, M., Johansson, L.E.B., Murphy, D.C., Olberg, M., Whyborn, N.D., Greve, A., Hansson, B., Lindström, C.O., Rydberg, A.* **216**, 315
- Laboratory microwave spectroscopy of the C<sub>3</sub>N radical in the vibrationally excited state  $v_5$   
*Mikami, H., Yamamoto, S., Saito, S., Guélin, M.* **217**, L5
- Carbon monoxide emission from the Ring Nebula in Lyra  
*Bachiller, R., Bujarrabal, V., Martin-Pintado, J., Gómez-González, J.* **218**, 252
- A 200 km s<sup>-1</sup> molecular outflow in the protoplanetary nebula CRL 618  
*Cernicharo, J., Guélin, M., Martin-Pintado, J., Peñalver, J., Mauersberger, R.* **222**, L1
- Dense gas in nearby galaxies. I. Distribution, kinematics and multilevel studies of CS  
*Mauersberger, R., Henkel, C.* **223**, 79
- The high density molecular cores near L1551-IRS5 and B335-FIR  
*Menten, K.M., Harju, J., Olano, C.A., Walmsley, C.M.* **223**, 258
- Line calibrators at  $\lambda = 1.3$ , 2 and 3 mm  
*Mauersberger, R., Guélin, M., Martin-Pintado, J., Thum, C., Cernicharo, J., Hein, H., Navarro, S.* **223**, 376; **79**, 217
- A search for HCOCN in molecular clouds  
*Gerin, M., Combes, F., Encarnaz, P., Turner, B., Wootten, A., Bogey, M., Destombes, J.L.* **224**, L24
- Geminid meteoroids traced to cometary activity on Phaethon  
*Gustafson, B.A.S.* **225**, 533
- Dense gas in nearby galaxies. II. CS emission from spiral galaxies  
*Mauersberger, R., Henkel, C., Wilson, T.L., Harju, J.* **226**, L5
- Microwave background**; see Cosmic background radiation
- Molecules**; see Atomic and molecular data; Interstellar medium: molecules; Radio lines: molecular
- Nebulae**; see Interstellar medium: HII regions; Planetary nebulae; Interstellar medium: reflexion nebulae; Supernovae and supernova remnants
- Neutrinos**; see Elementary particles
- Nuclear reactions**
- Neutron capture nucleosynthesis and the evolution of 15 and  $M_{\odot}$  stars. I. The core helium burning phase  
*Langer, N., Arcoragi, J.-P., Arnould, M.* **210**, 187
- s-Process studies on tin  
*Beer, H., Walter, G., Käppeler, F.* **211**, 245
- The nature of absorption features in the spectra of gamma-ray bursts  
*Bisnovatyi-Kogan, G.S., Illarionov, A.F.* **213**, 107
- Resonance neutron capture by argon-40  
*Macklin, R.L., Winters, R.R., Schmidt, D.M.* **216**, 109
- Proton mixing in He-rich layers: the <sup>13</sup>C( $\alpha$ , n)<sup>16</sup>O neutron source and associated nucleosynthesis  
*Jorissen, A., Arnould, M.* **221**, 161
- A potential diagnostic for low energy, nonthermal protons in solar flares  
*MacKinnon, A.L.* **226**, 284
- Nucleosynthesis**
- Abundance of manganese in metal-poor stars  
*Gratton, R.G.* **208**, 171
- Tidally-detonated nuclear reactions in main sequence stars passing near a large black hole  
*Luminet, J.-P., Pichon, B.* **209**, 85
- Tidal pinching of white dwarfs  
*Luminet, J.-P., Pichon, B.* **209**, 103
- Explosive nucleosynthesis in supernova 1978 A  
*Hashimoto, M., Nomoto, K., Shigeyama, T.* **210**, L5
- Neutron capture nucleosynthesis and the evolution of 15 and  $M_{\odot}$  stars. I. The core helium burning phase  
*Langer, N., Arcoragi, J.-P., Arnould, M.* **210**, 187
- s-Process studies on tin  
*Beer, H., Walter, G., Käppeler, F.* **211**, 245
- Resonance neutron capture by argon-40  
*Macklin, R.L., Winters, R.R., Schmidt, D.M.* **216**, 109
- The synthesis of <sup>26</sup>Al in massive stars  
*Walter, R., Maeder, A.* **218**, 123
- Gamma-ray lines from radioactive nuclei produced in hydrostatic stellar burning phases  
*Prantzos, N.* **223**, 136
- The radioactivity of SN 1987 A  
*Lehoucq, R., Cassé, M., Cesarsky, C.J.* **224**, 117



## Numerical methods

- Radiation hydrodynamics of the boundary layer in accretion disks. I. Numerical methods  
*Kley, W.* **208**, 98
- A model for a stellar wind driven by linear acoustic waves  
*Pijpers, F.P., Hearn, A.G.* **209**, 198
- The segmented Prony method for the analysis of non-stationary time series  
*Barone, P., Massaro, E., Polichetti, A.* **209**, 435
- Time-dependent MHD simulations for cometary plasmas  
*Schmidt-Voigt, M.* **210**, 433
- Astrometric plate reductions with orthogonal functions  
*Brosche, P., Wildermann, E., Geffert, M.* **211**, 239
- Operator perturbation method for multi-level line transfer with partial redistribution  
*Uitenbroek, H.* **213**, 360
- Hydrodynamics of the interstellar gas in colliding galaxies. II. Non-central collisions  
*Müller, E., Mair, G., Hillebrandt, W.* **216**, 19
- An efficient method for the evaluation of general redistribution integration weights  
*Uitenbroek, H.* **216**, 310
- A conservative second-order difference scheme for curvilinear co-ordinates. I. Assignment of variables on a staggered grid  
*Mönchmeyer, R., Müller, E.* **217**, 351
- Image deconvolution applied to the 3C 273 jet  
*Fraix-Burnet, D., Nieto, J.-L., Roques, S.* **217**, 387
- Numerical simulation of acoustic instabilities in thin accretion disks  
*Kaisig, M.* **218**, 89
- A compact group in Virgo  
*Mamon, G.A.* **219**, 98
- A comparative study of the discrete and cross correlation techniques: an application to the NGC 5548 IUE light-curve  
*Rodríguez-Pascual, P.M., Santos-Lleó, M., Clavel, J.* **219**, 101
- Time-dependent corona models: dynamical response to perturbations  
*Korevaar, P., Hearn, A.G.* **220**, 177
- Solution of light curves with third light contribution: the eclipsing binaries LY Aurigae and AH Cephei reconsidered  
*Drechsel, H., Lorenz, R., Mayer, P.* **221**, 49
- Lyapunov characteristic numbers and the structure of phase-space  
*Contopoulos, G., Barbanis, B.* **222**, 329
- Time-dependent corona models: global relaxation oscillations  
*Korevaar, P., Hearn, A.G.* **224**, 141
- Dynamical Voronoi tessellation. I. The two-dimensional case  
*Zaninetti, L.* **224**, 345
- The polarized internal radiation field of a planetary atmosphere  
*Stammes, P., de Haan, J.F., Hovenier, J.W.* **225**, 239
- Time-dependent corona models: scaling laws  
*Korevaar, P., Martens, P.C.H.* **226**, 203
- Time-dependent corona models: coronae with accretion  
*Korevaar, P.* **226**, 209
- Non-LTE model atmosphere calculations with approximate lambda operators: application of tridiagonal operators  
*Werner, K.* **226**, 265
- A simple method for calculating the *H*-matrix for molecular scattering  
*de Rooij, W.A., Bosma, P.B., van Hooft, J.P.C.* **226**, 347

## Observational methods

- Pulsating CP2 stars. I.  $\alpha$  Circini (HD 128898)  
*Schneider, H., Weiss, W.W.* **210**, 147
- Linear polarization of Babcock's star  
*Breger, M., Weiss, W.W., Wills, B.J.* **215**, 48
- An improved technique for the search for optical emission from radio pulsars, and its application to PSR 0301+19, 1919+21 and 2303+30  
*Perryman, M.A.C., Jakobsen, P., Colina, L., Lelièvre, G., Macchetto, F., Nieto, J.L., di Serego Alighieri, S.* **215**, 195
- Imagery with infrared arrays. I. Ground-based system and astronomical performances  
*Lacombe, F., Tiphène, D., Rouan, D., Léna, P., Combes, M.* **215**, 211
- A catalogue of ground-based astrometric observations of the Martian satellites, 1877-1982  
*Morley, T.A.* **215**, 409; **77**, 209
- Phobos and Deimos astrometric observations from Mariner 9  
*Duxbury, T.C., Callahan, J.D.* **216**, 284
- Technical aspects of the speckle masking phase reconstruction algorithm  
*Pehlemann, E., von der Lühe, O.* **216**, 337
- Detection of weak signals in TeV gamma-ray astronomy: dc excess vs. periodic amplitude  
*Lewis, D.A.* **219**, 352
- The Thomson THX 31513 linear array in a photon counting mode under electron bombardment: evaluation tests and first results  
*Cuby, J.G., Baudrand, J., Chevreton, M.* **220**, 335
- IUE-ULDA/USSP: the on-line resolution spectral data archive of the International Ultraviolet Explorer  
*Wamsteker, W., Driessen, C., Munoz, J.R., Hassall, B.J.M., Pasian, F., Barylak, M., Russo, G., Egret, D., Murray, J., Talavera, A., Heck, A.* **220**, 341; **79**, 1
- Optimization of parameters for helioseismology experiments measuring solar radial velocities  
*Appourchaux, T.* **222**, 361
- Line calibrators at  $\lambda = 1.3, 2$  and  $3$  mm  
*Mauersberger, R., Guélin, M., Martin-Pintado, J., Thum, C., Cernicharo, J., Hein, H., Navarro, S.* **223**, 376; **79**, 217
- Pulsating CP2 stars. II.  $\gamma$  Equulei (HD 201601) and  $\beta$  Coronae Borealis (HD 137909)  
*Weiss, W.W., Schneider, H.* **224**, 101
- Solar feature correlation tracker for ground-based telescopes  
*von der Lühe, O., Widener, A.L., Rimmele, Th., Spence, G., Dunn, R.B., Wiborg, P.* **224**, 351
- The phase problem in optical interferometry: error analysis in the presence of photon noise  
*Chelli, A.* **225**, 277
- Occultations**
- Infrared observations of Io during the mutual events of 1985: evidence of volcanic activity?  
*Medina, F., Echevarría, J., Ledezma, E., Martínez, F.* **220**, 313
- Visibility of Io's occultations in 1991  
*Arlot, J.-E., Rocher, P.* **223**, 381; **80**, 1
- Meter wavelength structures, flux densities and accurate positions of weak radio sources  
*Akujor, C.E., Noshi, M.N., Kazès, I.* **224**, 363; **80**, 215

Model-independent retrieval of brightness profiles from lunar occultation lightcurves in the near infrared domain  
*Richichi, A.* **226**, 366

**Parallaxes**; see Distances, distance scale

**Particle acceleration**; see Acceleration mechanisms

## Photometry

The UU Herculis star HD 161796

*Mantegazza, L., Antonello, E., Poretti, E.* **208**, 91

The maximum amplitude of the optical micro-variations of massive O-F type stars (or  $\alpha$  Cygni variables, including LBV's or SDor variables) across the HR diagram

*van Genderen, A.M.* **208**, 135

Infrared observations and the fundamental properties of white dwarf stars

*Leggett, S.K.* **208**, 141

Optical flares from the dwarf M star V 577 Mon (Gliese 234 AB = Ross 614)

*Doyle, J.G., van den Oord, G.H.J., Butler, C.J.* **208**, 208

Photometric and spectroscopic study of three candidate Herbig Ae/Be stars: HD 37411, HD 100546 and HD 104237

*Hu, J.Y., Thé, P.S., de Winter, D.* **208**, 213

The Baade-Wesselink method applied to field RR Lyrae stars. II. SW Andromedae, SW Draconis, and SS Fornacis

*Cacciari, C., Clementini, G., Prevot, L., Buser, R.* **209**, 141

The Baade-Wesselink method applied to field RR Lyrae stars. III. YZ Capricorni, RV Phoenixis, and V440 Sagittarii

*Cacciari, C., Clementini, G., Buser, R.* **209**, 154

Long- and short-term variability of the T Tauri Star RY Lupi

*Gahm, G.F., Fischerström, C., Liseau, R., Lindroos, K.P.* **211**, 115

Strömgren photometry of late-type supergiants in the Small Magellanic Cloud

*Richler, T.* **211**, 199

PG 1550 + 131: a short periodic precataclysmic binary with very deep eclipses

*Haefner, R.* **213**, L15

The Geneva photometric monitoring of SN 1987 A

*Burki, G., Cramer, N., Burnet, M., Rufener, F., Pernier, B., Richard, C.* **213**, L26

An investigation of the micro variations of highly luminous OBA-type stars ( $\alpha$  Cygni variables). VIII. A study of the periodicities in the radial velocity and light variations of the nitrogen-rich supergiant HD 105056 (ON 9.7 Iae)

*van Genderen, A.M., Breukers, R.J.L.H., Houtekamer, P., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M.* **213**, 161

Absolute dimensions of eclipsing binaries. XV. EM Carinae

*Andersen, J., Clausen, J.V.* **213**, 183

The galactic foreground reddening of SN 1987 A

*Gochermann, J., Goudfroot, P., Schmidt-Kaler, Th.* **213**, 333

The colour of comet P/Halley's nucleus and dust

*Thomas, N., Keller, H.U.* **213**, 487

A photometric study of F-type stars of high galactic latitude

*Arellano Ferro, A., Giridhar, S., Chavez, M., Parrao, L.* **214**, 123

Photographic and spectroscopic observations of three type Ia supernovae: 1982W, 1983R, and 1983U

*Barbon, R., Ciatti, F., Iijima, T., Rosino, L.* **214**, 131

Constraints on the optical counterpart of GBS 0526-66

*Boer, M., Hurley, K., Gottardi, M., Motch, C., Pedersen, H., Simonsen, R.L.* **214**, 148

Effects of stellar rotation on the Geneva photometric system

*Hauck, B., Slettebak, A.* **214**, 153

Multiple close frequencies of the Delta Scuti star  $\theta^2$  Tauri. II. The second multisite campaign

*Breger, M., Garrido, R., Huang Lin, Jiang Shi-yang, Guo Zi-he, Frueh, M., Paparo, M.* **214**, 209

Investigation of micro-flaring and secular and quasi-periodic variations in the dMe flare stars. II. "Time signatures" of micro-variability in V 1285 Aquilae, V 645 Centauri, V 1054 Ophiuchi and AU Microscopii

*Andrews, A.D.* **214**, 220

Relations involving the spherical albedo and other photometric quantities of planets with thick atmospheres

*Hovenier, J.W., Hage, J.I.* **214**, 391

The value of the time delay  $\Delta T(A, B)$  for the "double" quasar 0957 + 561 from optical photometric monitoring

*Vanderriest, C., Schneider, J., Herpe, G., Chevreton, M., Moles, M., Wlérick, G.* **215**, 1

Further observations of stars associated with the Sharpless H II region Sh 2-252, and of the Herbig A0e star Sh 2-252 b

*Chavarría-K., C., Leitherer, C., de Lara, E., Sánchez, O., Zickgraf, F.-J.* **215**, 51

Stellar photometric stability. I. The open clusters Melotte 105, NGC 2660 and NGC 4755

*Frandsen, S., Dreyer, P., Kjeldsen, H.* **215**, 287

An empirical colour- $T_{\text{eff}}$  calibration for G and K dwarf and subdwarf stars

*Arribas, S., Martinez Roger, C.* **215**, 305

Strömgren and H $\beta$  photometry of stars earlier than G0 in the Southern Coalsack direction

*Franco, G.A.P.* **215**, 410; 77, 227

Four-colour photometry of eclipsing binaries. XXXI. Light curves of EM Carinae

*Clausen, J.V., Giménez, A., Helt, B.E., Jensen, K.S., Vaz, L.P.R.* **215**, 410; 77, 257

uvby $\beta$  photometry of peculiar B and A stars, discovered at Abastumani

*Alania, I.F., Abuladze, O.P., West, R.M.* **215**, 411; 77, 333

Physical parameters of stars in the Scorpio-Centaurus OB association

*de Geus, E.J., de Zeeuw, P.T., Lub, J.* **216**, 44

W Sagittarii: pulsation and orbit

*Babel, J., Burki, G., Mayor, M., Waelkens, C., Chmielewski, Y.* **216**, 125

Simulated aperture-photometry on CCD-frames for 67 Southern Galaxies in B and R

*Peletier, R.F., Lauberts, A., Valentijn, E.A.* **217**, 391; 77, 339

$\Delta\alpha$ -photometry of Be/shell stars

*Pavlovski, K., Maitzen, H.M.* **217**, 391; 77, 351

Photometry and spectroscopy of stars in northern H II regions

*Forbes, D.* **217**, 393; 77, 439

Photographic UVB photometry to  $V \sim 21$  in the Puppis window

*Cameron Reed, B.* **217**, 393; 77, 447

Lightcurves of the Algol-variable U CrB in the UPS photometric system

*van Gent, R.H.* **217**, 393; 77, 471

The absolute H $\beta$  fluxes for southern planetary nebulae

*Acker, A., Stenholm, B., Tylenda, R.* **217**, 394; 77, 487

- Determination of the absolute flux from Vega at 2.250  $\mu\text{m}$   
*Booth, A.J., Selby, M.J., Blackwell, D.E., Petford, A.D., Arribas, S.* **218**, 167
- H $\alpha$  versus X-ray luminosity in dwarf M stars  
*Doyle, J.G.* **218**, 195
- Post-perihelion observations of comet P/Halley at  $r=8.5$  AU  
*West, R.M., Jørgensen, H.E.* **218**, 307
- UBV photometry and the structure of the galactic cluster NGC 2516  
*Dachs, J., Kabus, H.* **218**, 338; **78**, 25
- Globular clusters in the Large Magellanic Cloud: CCD photometry of NGC 1866  
*Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S.* **218**, 339; **78**, 89
- Estimation of stellar intrinsic colours, distances and colour excesses based on the Strömgren and H $\beta$  photometry of 804 B, A, and F stars in 10 selected areas  
*Franco, G.A.P.* **218**, 339; **78**, 105
- UBV $\beta$  photometry of luminous early-type stars and emission-line stars in the Southern Coalsack region  
*Westerlund, B.E., Garnier, R.* **218**, 341; **78**, 203
- Confirmation of the Galactic Thick Disk Component by the Basle RGU- and UBV-photometric space densities. I  
*Fenkart, R.* **218**, 342; **78**, 217
- Photometric calibration of the APM Proper Motion Project  
*Evans, D.W.* **218**, 342; **78**, 249
- The surface gravities of Ap stars: spectroscopic estimates from H $\beta$  profiles and comparison with photometry  
*North, P., Kroll, R.* **218**, 343; **78**, 325
- The calibration of intrinsic colours in *wby* photometry  
*Delgado, A.J., Alfaro, E.J.* **219**, 121
- Red giants in open clusters. I. Binarity and stellar evolution in five Hyades-generation clusters: NGC 2447, 2539, 2632, 6633 and 6940  
*Mermilliod, J.-C., Mayor, M.* **219**, 125
- $\Delta\alpha$ -photometry of  $\lambda$  Bootis stars  
*Maitzen, H.M., Pavlovski, K.* **219**, 253
- Vesta's shape, density and albedo features  
*Cellino, A., Di Martino, M., Drummond, J., Farinella, P., Paolicchi, P., Zappalà, V.* **219**, 320
- Post-perihelion photometry of comet Liller (1988 a) at Catania (Italy) Observatory  
*Baratta, G.A., Catalano, F.A., Leone, F., Strazzulla, G.* **219**, 322
- Photometric metal abundances of high-luminosity red stars in young and intermediate-age open clusters  
*Clariá, J.J., Lapasset, E., Minniti, D.* **219**, 363; **78**, 363
- BVR photoelectric photometry of late-type stars and a compilation of other data in the Small Magellanic Cloud  
*Maurice, E., Bouchet, P., Martin, N.* **219**, 365; **78**, 445
- Catalogue of stars measured in the Geneva Observatory photometric system (fourth edition)  
*Rufener, F.* **219**, 365; **78**, 469
- Physical studies of asteroids. XIX. Phase relations and composite lightcurves obtained with the Carlsberg Meridian Circle  
*Lagerkvist, C.-I., Magnusson, P., Williams, I.P., Buontempo, M.E., Gibbs, P., Morrison, L.V.* **219**, 366; **78**, 519
- Non-radial oscillations in HR 1225,  $\alpha^1$  Eridani and HR 547  
*Poretti, E.* **220**, 144
- The flare activity of the red dwarf binary Gliese 277 AB  
*Hawley, S.L., Panov, K.P., Pettersen, B.R., Sundland, S.R.* **220**, 218
- Photometric investigation of comets Bradfield 1987 S and P/Borrelly  
*Boehnhardt, H., Drechsel, H., Vanysek, V., Waha, L.* **220**, 286
- Confirmation of the Galactic Thick Disk Component by the Basle RGU- and UBV-photometric space densities. II (Synopsis of 25 years Basle Halo Program; II: Plaut I, NGC 6171, SA 158, M13)  
*Fenkart, R.* **220**, 342; **79**, 51
- The distance and structure of the Coalsack. I. Photometric data  
*Seidensticker, K.J.* **220**, 343; **79**, 61
- NGC 6752: a globular cluster with a resolved post-collapse core?  
*Aurière, M., Ortolani, S.* **221**, 20
- wby*- $\beta$  photometry of high-velocity and metal-poor stars. II. Intrinsic color and metallicity calibrations  
*Schuster, W.J., Nissen, P.E.* **221**, 65
- The new long-period Cepheid G458 = HDE 270100 in the Large Magellanic Cloud  
*van Genderen, A.M., Hadiyanto Nitihardjo, G.* **221**, 230
- Near-infrared observations and optical identifications of a few unassociated IRAS sources with dust shells  
*Iyengar, K.V.K., Ghosh, S.K., Rengarajan, T.N., Verma, R.P., Joshi, S.C., Srivastava, R.K.* **221**, 250
- wby*- $\beta$  photometry of high-velocity and metal-poor stars. III. Metallicities and ages of the halo stars  
*Schuster, W.J., Nissen, P.E.* **222**, 69
- Interstellar extinction in the area of the North America and Pelican Nebula complex  
*Straižys, V., Goldberg, E.P., Meistas, E., Vansevicius, V.* **222**, 82
- Comet P/Halley at a heliocentric preperihelion distance of 2.6 AU: jet activity and properties of the dust coma  
*Lamy, P.L., Malburet, P., Llebaria, A., Koutchmy, S.* **222**, 316
- Photometric variations of 46 Eridani and 210 G Eridani  
*Manfroid, J., Renson, P.* **223**, 187
- High latitude molecular clouds: distances derived from accurate photometry  
*Franco, G.A.P.* **223**, 313
- The puzzling case of asteroid 8 Flora solved  
*Di Martino, M., Zappalà, V., Cellino, A., Barucci, M.A., Harris, A.W., Young, J.W., Zeigler, K.* **223**, 352
- Spectroscopy and deep photometry of Pal 3 and C0422-213  
*Ortolani, S., Gratton, R.G.* **223**, 375; **79**, 155
- Light variations of massive stars ( $\alpha$  Cygni variables). IX  
*van Genderen, A.M., Bovenschen, H., Engelsman, E.C., Goudfrooy, P., van Haarlem, M.P., Hartmann, D., Latour, H.J., Ng, Y.K., Prein, J.J., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M., Tjdhof, W.* **223**, 376; **79**, 263
- Isophotal twisting in isolated elliptical galaxies  
*Fasano, G., Bonoli, C.* **223**, 377; **79**, 291
- Light variations of massive stars ( $\alpha$  Cygni variables). X. The F type supergiants G266 = HDE271182 = R92 and G322 = HDE269612 in the LMC  
*van Genderen, A.M., Hadiyanto Nitihardjo, G.* **223**, 379; **79**, 401
- A bibliography of colour magnitude diagram studies of star clusters in the Magellanic Clouds  
*Sagar, R., Pandey, A.K.* **223**, 379; **79**, 407
- Empirical temperature calibrations for early-type stars  
*Gulati, R.K., Malagnini, M.L., Morossi, C.* **223**, 382; **80**, 73

- Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities (Synopsis of 25 years Basle Halo Program. III. [*RGU* + *UBV*]: SA 82, SA 133, SA 57, SA 54)  
*Fenkart, R.* **223**, 382; **80**, 89
- Strömgren and *Hβ* photometry of stars earlier than G0 in 5 areas containing high latitude molecular clouds  
*Franco, G.A.P.* **223**, 383; **80**, 127
- Simultaneous *UBVRI* photometry of Nova DQ Herculis (1934)  
*Schoembs, R., Rebhan, H.* **224**, 42
- Pulsating CP2 stars. II.  $\gamma$  Equulei (HD 201601) and  $\beta$  Coronae Borealis (HD 137909)  
*Weiss, W.W., Schneider, H.* **224**, 101
- Strömgren photometry of the variable Wolf-Rayet star HD 86161 = WR 16  
*van Genderen, A.M., van der Hucht, K.A., Bakker, P.R.* **224**, 125
- uvby* photometry of wide visual double stars. III.  
*Oblak, E.* **224**, 364; **80**, 249
- The Cepheid 1162 Aquilae  
*Mavridis, L.N., Nikolov, N.S., Avgoloupis, S.I., Varvoglis, P.P.* **224**, 365; **80**, 279
- Infrared photometry and spectrophotometry of SN 1987 A. I. March to October 1987 observations  
*Bouchet, P., Moneti, A., Slezak, E., Le Bertre, T., Manfroid, J.* **224**, 367; **80**, 379
- The photometric periods of the intermediate polar EX Hydrae  
*Siegel, N., Reinsch, K., Beuermann, K., van der Woerd, H., Wolff, E.* **225**, 97
- The optical variability of 3C 345  
*Kidger, M.R.* **226**, 9
- uvbyβ* photometry for 67 stars in the region of  $\alpha$  Persei  
*Trullols, E., Rosselló, G., Jordi, C., Lahulla, F.* **226**, 415; **81**, 47
- Photometric analysis of the eclipsing binary RX Hydrae  
*Vyas, M.L., Abhyankar, K.D.* **226**, 415; **81**, 67
- Photometric study of the eclipsing binary RR Leporis  
*Vyas, M.L., Abhyankar, K.D.* **226**, 415; **81**, 81
- A photometric study of wide visual double stars with significant relative proper motion  
*Sinachopoulos, D.* **226**, 415; **81**, 103
- Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric Space Densities (Synopsis of 25 years Basle Halo Program). IV. SA 107  
*Fenkart, R.* **226**, 418; **81**, 187
- Four-colour photometry of eclipsing binaries. XXXII. Light curves of V 1031 Orionis  
*Clausen, J.V., Nordström, B., Andersen, J.* **226**, 418; **81**, 197
- Further  $\Delta\alpha$ -photometry of  $\lambda$  Bootis stars  
*Maitzen, H.M., Pavlovski, K.* **226**, 421; **81**, 335
- Up-to-date DDO photoelectric photometric catalogue  
*Mermilliod, J.C., Nitschelm, C.* **226**, 421; **81**, 401
- Planetary nebulae: general**
- State selective excitation of OIII by charge transfer of OIV with H  
*Gargaud, M., McCarroll, R., Opradölce, L.* **208**, 251
- Effective collision strengths for fine-structure forbidden transitions in the  $3p^3$  configuration of ClIII  
*Butler, K., Zeppen, C.J.* **208**, 337
- Properties of planetary nebulae. II. Central star evolution  
*Gathier, R., Pottasch, S.R.* **209**, 369
- The structure of the molecular gas in the young planetary nebula NGC 2346  
*Bachiller, R., Planesas, P., Martín-Pintado, J., Bujarrabal, V., Tafalla, M.* **210**, 366
- Distances and mass distribution of central stars of planetary nebulae  
*Weidemann, V.* **213**, 155
- Snapshots of evolving model planetary nebulae  
*Stasińska, G.* **213**, 274
- Magnitudes of central stars of southern planetary nebulae  
*Tylenda, R., Acker, A., Gleizes, F., Stenholm, B.* **213**, 520; **77**, 39
- Near-infrared survey of IRAS sources with colours like planetary nebulae  
*Manchado, A., Pottasch, S.R., García-Lario, P., Esteban, C., Mampaso, A.* **214**, 139
- High resolution spectroscopy of the planetary nebula Hubble 12  
*Miranda, L.F., Solf, J.* **214**, 353
- Radio recombination line observations of compact planetary nebulae  
*Garay, G., Gathier, R., Rodríguez, L.F.* **215**, 101
- Low mass planetary nebulae near the galactic centre  
*Zijlstra, A.A., Pottasch, S.R.* **216**, 245
- OH maser emission from young planetary nebulae  
*Zijlstra, A.A., te Lintel Hekkert, P., Pottasch, S.R., Caswell, J.L., Ratag, M., Habing, H.J.* **217**, 157
- The evolution of planetary nebulae nuclei: models against observations  
*Tylenda, R., Stasińska, G.* **217**, 209
- The absolute *Hβ* fluxes for southern planetary nebulae  
*Acker, A., Stenholm, B., Tylenda, R.* **217**, 394; **77**, 487
- The effect of mass loss on the evolution of low-mass post-AGB stars  
*Trams, N.R., Waters, L.B.F.M., Waelkens, C., Lamers, H.J.G.L.M., van der Veen, W.E.C.J.* **218**, L1
- A newly discovered compact planetary nebula  
*Cappellaro, E., Turatto, M., Sabbadin, F.* **218**, 241
- Carbon monoxide emission from the Ring Nebula in Lyra  
*Bachiller, R., Bujarrabal, V., Martín-Pintado, J., Gómez-González, J.* **218**, 252
- A CO  $J=2\rightarrow 1$  survey of type I post-main-sequence nebulae  
*Phillips, J.P., Mampaso, A.* **218**, 257
- New near-IR photometry of southern planetary nebulae  
*Preite-Martinez, A., Persi, P.* **218**, 264
- IRAS 16455-3455 and IRAS 15154-5258: two new southern planetary nebulae  
*Manchado, A., García-Lario, P., Pottasch, S.R.* **218**, 267
- Spectroscopic search for halos of planetary nebulae  
*Bässgen, M., Grewing, M.* **218**, 273
- A catalogue of expansion velocities of galactic planetary nebulae  
*Weinberger, R.* **218**, 343; **78**, 301
- Revisited mass-loss rates for a sample of central stars of planetary nebulae  
*Hutsemékers, D., Surdej, J.* **219**, 237
- Evolution of planetary nebulae in the galactic bulge  
*Pottasch, S.R., Acker, A.* **221**, 123
- Improved M1 and E2 transition probabilities for forbidden lines in ions of the nitrogen isoelectronic sequence  
*Becker, S.R., Butler, K., Zeppen, C.J.* **221**, 375
- A 200 km s<sup>-1</sup> molecular outflow in the protoplanetary nebula CRL 618  
*Cernicharo, J., Guélin, M., Martín-Pintado, J., Peñalver, J., Mauersberger, R.* **222**, L1



Chemical abundances and masses of the haloes around the planetary nebulae NGC 6543 and NGC 6826

*Manchado, A., Pottasch, S.R.* **222**, 219

Bipolar radio morphology in the compact nebula K 3-35

*Aaquist, O.B., Kwok, S.* **222**, 227

Zanstra temperatures of the central stars of southern planetary nebulae

*Glazes, F., Acker, A., Stenholm, B.* **222**, 237

Echelle observations of the high speed motions in the extreme bipolar nebula He2-111 (PK 315 -0°1)

*Meaburn, J., Walsh, J.R.* **223**, 277

Discovery of a planetary nebula in the field of the open cluster NGC 6087

*Koester, D., Reimers, D.* **223**, 326

A catalogue of VLA radio continuum observations of planetary nebulae with the Very Large Array

*Zijlstra, A.A., Pottasch, S.R., Bignell, C.* **223**, 378; **79**, 329

Spectrophotometry of southern planetary nebulae. I. Plasma diagnostics

*Acker, A., Köppen, J., Stenholm, B., Jasiewicz, G.* **224**, 363; **80**, 309

Optical and infrared observations of four suspected proto-planetary objects

*Le Bertre, T., Epchtein, N., Gouiffes, C., Heydari-Malayeri, M., Perrier, C.* **225**, 417

The far-infrared (IRAS) excess in BQ [ ] and related stars

*Parthasarathy, M., Pottasch, S.R.* **225**, 521

Objects in transition from the AGB to the planetary nebula stage: new visual and infrared observations

*van der Veen, W.E.C.J., Habing, H.J., Geballe, T.R.* **226**, 108

The energy-balance temperature of central stars of galactic planetary nebulae

*Preite-Martinez, A., Acker, A., Köppen, J., Stenholm, B.* **226**, 421; **81**, 309

#### Planetary nebulae: individual

##### Cn 1-1

CN 1-1: a bipolar type I planetary nebula

*Bhatt, H.C.* **214**, 331

##### Hb 12

High resolution spectroscopy of the planetary nebula Hubble 12

*Miranda, L.F., Solf, J.* **214**, 353

##### He2-111

Echelle observations of the high speed motions in the extreme bipolar nebula He2-111 (PK 315 -0°1)

*Meaburn, J., Walsh, J.R.* **223**, 277

##### IRAS 15154-5258

IRAS 16455-3455 and IRAS 15154-5258: two new southern planetary nebulae

*Manchado, A., Garcia-Lario, P., Pottasch, S.R.* **218**, 267

##### IRAS 16455-3455

IRAS 16455-3455 and IRAS 15154-5258: two new southern planetary nebulae

*Manchado, A., Garcia-Lario, P., Pottasch, S.R.* **218**, 267

##### IRAS 17516-2525

IRAS 17516-2525: an evolved star or a young stellar object?

*van der Veen, W.E.C.J., Geballe, T.R., Habing, H.J., van Langvelde, H.J.* **216**, L1

#### K 3-35

Bipolar radio morphology in the compact nebula K 3-35

*Aaquist, O.B., Kwok, S.* **222**, 227

#### M1-92

Near-infrared morphology of protoplanetary nebulae: the icy dust torus of Minkowski's Footprint (M1-92)

*Eiroa, C., Hodapp, K.-W.* **223**, 271

#### NGC 2346

The structure of the molecular gas in the young planetary nebula NGC 2346

*Bachiller, R., Planesas, P., Martin-Pintado, J., Bujarrabal, V., Tafalla, M.* **210**, 366

#### NGC 6543

Chemical abundances and masses of the haloes around the planetary nebulae NGC 6543 and NGC 6826

*Manchado, A., Pottasch, S.R.* **222**, 219

#### NGC 6720

Carbon monoxide emission from the Ring Nebula in Lyra

*Bachiller, R., Bujarrabal, V., Martin-Pintado, J., Gómez-González, J.* **218**, 252

#### NGC 6826

Chemical abundances and masses of the haloes around the planetary nebulae NGC 6543 and NGC 6826

*Manchado, A., Pottasch, S.R.* **222**, 219

#### OH 231.8+4.2

The dynamics of the Calabash Nebula

*Icke, V., Preston, H.L.* **211**, 409

#### Planets and satellites: atmospheres of

Relations involving the spherical albedo and other photometric quantities of planets with thick atmospheres

*Hovenier, J.W., Hage, J.I.* **214**, 391

Minimum planetary size for forming outer Jovian-type planets: stability of an isothermal atmosphere surrounding a protoplanet

*Sasaki, S.* **215**, 177

H Lyman- $\alpha$  emission at Neptune: Voyager prediction

*McConnell, J.C., Parkinson, C.D., Ben-Jaffel, L., Emerich, C., Prangée, R., Vidal-Madjar, A.* **225**, L9

The polarized internal radiation field of a planetary atmosphere

*Stammes, P., de Haan, J.F., Hovenier, J.W.* **225**, 239

Equatorial cloud structure of Jupiter derived from high resolution spectroscopy in the  $\lambda\lambda$  6300-6825 Å region

*Molina, A., Moreno, F., López-Moreno, J.J.* **226**, 311

A simple method for calculating the  $H$ -matrix for molecular scattering

*de Rooij, W.A., Bosma, P.B., van Hooff, J.P.C.* **226**, 347

#### Planets and satellites: general

Models of evolutionary tracks of planetary satellites

*Horedt, G.P.* **209**, 411

Fundamental frequencies and small divisors in the orbits of the outer planets

*Nobili, A.M., Milani, A., Carpino, M.* **210**, 313

Astrolabe observations of Uranus at Santiago

*Noël, F.* **213**, 521; **77**, 73

Minimum planetary size for forming outer Jovian-type planets: stability of an isothermal atmosphere surrounding a protoplanet  
*Sasaki, S.* **215**, 177

Tidal evolution in the Neptune-Triton system

*Chyba, C.F., Jankowski, D.G., Nicholson, P.D.* **219**, L23

Collisional probability of planetesimals revolving in the solar gravitational field. I. Basic formulation

*Nakazawa, K., Ida, S., Nakagawa, Y.* **220**, 293

Collisional probability of planetesimals revolving in the solar gravitational field. II. The validity of the two-body approximation

*Nakazawa, K., Ida, S., Nakagawa, Y.* **221**, 342

Secular perturbations of the Uranian satellites: theory and practice

*Malhotra, R., Fox, K., Murray, C.D., Nicholson, P.D.* **221**, 348

Analysis of the orbits of Titan, Hyperion, and Iapetus by numerical integration

*Harper, D., Taylor, D.B., Sinclair, A.T.* **221**, 359

Planetary orbits in the elliptic restricted problem. II. The Sirius system

*Benest, D.* **223**, 361

Collisional probability of planetesimals revolving in the solar gravitational field. III

*Ida, S., Nakazawa, K.* **224**, 303

Lagrangian satellites of Tethys and Dione. I. Reduction of observations

*Oberti, P., Veillet, C., Catullo, V.* **224**, 365; **80**, 289

Stability of outer planetary orbits (P-types) in binaries

*Dvorak, R., Froeschlé, Ch., Froeschlé, Cl.* **226**, 335

#### Planets and satellites: individual

##### Deimos

The orbits of the satellites of Mars from spacecraft and Earth-based observations

*Jacobson, R.A., Synnott, S.P., Campbell, J.K.* **225**, 548

##### Galilean satellites

An analysis of the observations of the mutual events of the Galilean satellites of Jupiter made in 1985 at the Observatoire de Haute Provence

*Arlot, J.E., Thuillot, W., D'Ambrosio, V.* **213**, 479

##### Hyperion

Analysis of the orbits of Titan, Hyperion, and Iapetus by numerical integration

*Harper, D., Taylor, D.B., Sinclair, A.T.* **221**, 359

##### Iapetus

Analysis of the orbits of Titan, Hyperion, and Iapetus by numerical integration

*Harper, D., Taylor, D.B., Sinclair, A.T.* **221**, 359

##### Io

A Catalogue of Jovian decametric radio observations from January 1982 to December 1984

*Leblanc, Y., Gerbault, A., Lecacheux, A.* **217**, 392; **77**, 425

Infrared observations of Io during the mutual events of 1985: evidence of volcanic activity?

*Medina, F., Echevarria, J., Ledezma, E., Martinez, F.* **220**, 313

Visibility of Io's occultations in 1991

*Arlot, J.-E., Rocher, P.* **223**, 381; **80**, 1

#### Jupiter

Solar wind control of Jupiter's hectometric radio emission

*Barrow, C.H., Desch, M.D.* **213**, 495

A Catalogue of Jovian decametric radio observations from January 1982 to December 1984

*Leblanc, Y., Gerbault, A., Lecacheux, A.* **217**, 392; **77**, 425

Jovian hectometric radiation: beaming, source extension, and solar wind control

*Ladreiter, H.P., Leblanc, Y.* **226**, 297

Equatorial cloud structure of Jupiter derived from high resolution spectroscopy in the  $\lambda\lambda$  6300–6825 Å region

*Molina, A., Moreno, F., López-Moreno, J.J.* **226**, 311

#### Neptune

Tidal evolution in the Neptune-Triton system

*Chyba, C.F., Jankowski, D.G., Nicholson, P.D.* **219**, L23

H Lyman- $\alpha$  emission at Neptune: Voyager prediction

*McConnell, J.C., Parkinson, C.D., Ben-Jaffel, L., Emerich, C., Prangée, R., Vidal-Madjar, A.* **225**, L9

#### Phobos

The orbits of the satellites of Mars from spacecraft and Earth-based observations

*Jacobson, R.A., Synnott, S.P., Campbell, J.K.* **225**, 548

#### Saturn

Analysis of the orbits of Titan, Hyperion, and Iapetus by numerical integration

*Harper, D., Taylor, D.B., Sinclair, A.T.* **221**, 359

#### Titan

Analysis of the orbits of Titan, Hyperion, and Iapetus by numerical integration

*Harper, D., Taylor, D.B., Sinclair, A.T.* **221**, 359

#### Triton

Tidal evolution in the Neptune-Triton system

*Chyba, C.F., Jankowski, D.G., Nicholson, P.D.* **219**, L23

#### Uranus

New developments in the discrete ordinate method for the resolution of the radiative transfer equation

*Ben Jaffel, L., Vidal-Madjar, A.* **220**, 306

Secular perturbations of the Uranian satellites: theory and practice

*Malhotra, R., Fox, K., Murray, C.D., Nicholson, P.D.* **221**, 348

#### Planets and satellites: magnetospheres of

A Catalogue of Jovian decametric radio observations from January 1982 to December 1984

*Leblanc, Y., Gerbault, A., Lecacheux, A.* **217**, 392; **77**, 425

#### Planets and satellites: satellites

An analysis of the observations of the mutual events of the Galilean satellites of Jupiter made in 1985 at the Observatoire de Haute Provence

*Arlot, J.E., Thuillot, W., D'Ambrosio, V.* **213**, 479

A catalogue of ground-based astrometric observations of the Martian satellites, 1877–1982

*Morley, T.A.* **215**, 409; **77**, 209

- IRAS 17516-2525: an evolved star or a young stellar object?  
*van der Veen, W.E.C.J., Geballe, T.R., Habing, H.J., van Langevelde, H.J.* **216**, L1
- Phobos and Deimos astrometric observations from Mariner 9  
*Duxbury, T.C., Callahan, J.D.* **216**, 284
- Infrared observations of Io during the mutual events of 1985: evidence of volcanic activity?  
*Medina, F., Echevarria, J., Ledezma, E., Martinez, F.* **220**, 313
- The orbits of the satellites of Mars determined from Earth-based and spacecraft observations  
*Sinclair, A.T.* **220**, 321
- Secular perturbations of the Uranian satellites: theory and practice  
*Malhotra, R., Fox, K., Murray, C.D., Nicholson, P.D.* **221**, 348
- The orbits of the satellites of Mars from spacecraft and Earth-based observations  
*Jacobson, R.A., Synnott, S.P., Campbell, J.K.* **225**, 548
- ### Plasmas
- Langmuir wave generation by thick target electron beams in solar flares: the effects of density variations and reverse currents  
*McClements, K.G.* **208**, 279
- The stability of isotropic distribution functions of relativistic electrons. II. Oblique propagating Langmuir waves in an electron-proton plasma  
*Lesch, H., Crusius, A., Schlickeiser, R.* **209**, 427
- Time-dependent MHD simulations for cometary plasmas  
*Schmidt-Voigt, M.* **210**, 433
- Synchrotron emission spectra from shockwaves in active galactic nuclei: an energy and space dependent diffusion coefficient  
*Fritz, K.D.* **214**, 14
- Potential of grains in astrophysical media: influence of the surface state (porosity)  
*Millet, J., Lafon, J.-P.J., Gonin, J.C.* **214**, 327
- Metallicity-dependence of radiative cooling in optically thin, hot plasmas  
*Böhringer, H., Hensler, G.* **215**, 147
- Determination of constant- $\alpha$  force-free magnetic fields above the photosphere using three-component boundary conditions  
*Cuperman, S., Ofman, L., Semel, M.* **216**, 265
- Ring currents and poloidal magnetic fields in nuclear regions of galaxies  
*Lesch, H., Crusius, A., Schlickeiser, R., Wielebinski, R.* **217**, 99
- Characteristics of type III bursts in the solar wind from simultaneous observations on board ISEE-3 and Voyager  
*Lecacheux, A., Steinberg, J.-L., Hoang, S., Dulk, G.A.* **217**, 237
- Coronal Mg  $^{+9}$ : collisional excitation of the 2s-2p multiplet  
*Burgess, A., Mason, H.E., Tully, J.A.* **217**, 319
- Particle acceleration at modified shock fronts. I. The power-law spectrum for relativistic flows  
*Schneider, P., Kirk, J.G.* **217**, 344
- Analytical expressions for the Rosseland-mean opacity and electron scattering in stellar atmospheres  
*Burger, P., Lamers, H.J.G.L.M.* **218**, 161
- Suprathermal ionization in evaporating clouds. Non-local electron distribution function  
*Ballet, J., Luciani, J.F., Mora, P.* **218**, 292
- Efficient computation of electron-electron bremsstrahlung emission in a hot thermal plasma  
*Haug, E.* **218**, 330
- Comments on the photospheric dynamo model of Hénoux and Somov  
*Melrose, D.B., Khan, J.I.* **219**, 308
- Synchrotron-cooling-included fine structure in extragalactic radio sources  
*Achterberg, A.* **221**, 364
- The probability of detecting absorption features in gamma-ray burst spectra  
*Melia, F.* **223**, L9
- Electron-ion coupling in Compton-heated plasmas  
*Schmutzler, T., Lesch, H.* **223**, 71
- Towards a self-consistent description of accretion columns. IV. Iterative scattering solution of radiative transfer and effects of bulk motion  
*Maile, T., Bock, U., Herold, H., Rebetzky, A., Ruder, H., Ventura, J., Wolf, K.* **223**, 251
- Electric antennae in the outer heliosphere: the importance of being stable  
*Meyer-Vernet, N.* **224**, L5
- Two-fluid model of superluminal radio sources: application to cosmology  
*Pelletier, G., Roland, J.* **224**, 24
- Density diagnostic and inhomogeneous plasmas. I. Isothermal plasmas  
*Almleaky, Y.M., Brown, J.C., Sweet, P.A.* **224**, 328
- Towards a self-consistent description of accretion columns. II. Frequency-dependent radiation hydrodynamics  
*Rebetzky, A., Bock, U., Herold, H., Kraus, U., Maile, T., Nollet, H.-P., Ruder, H., Wolf, K.* **225**, 137
- Synchrotron pair cascades in strong magnetic fields  
*Baring, M.G.* **225**, 260
- Collective plasma processes in extragalactic radio sources  
*Lesch, H., Appl, S., Camenzind, M.* **225**, 341
- Particle acceleration at modified shock fronts. II. The problem of injection  
*Kirk, J.G., Schneider, P.* **225**, 559
- Dynamic stabilization of unstable gravity modes by magnetic fields in non-uniform and compressible plasmas  
*Hermans, D., Goossens, M.* **225**, 569
- ### Polarization
- The magnetic field of NGC 6946  
*Harnett, J.I., Beck, R., Buczkowski, U.R.* **208**, 32
- Dust grains in M 104: an interpretation of the optical polarization in an external galaxy  
*Matsumura, M., Seki, M.* **209**, 8
- Constraints on integrated nuclear rotation measures in core-dominated active galactic nuclei  
*O'Dea, C.P.* **210**, 35
- The polarized dust envelope around the red supergiant  $\mu$  Cephei  
*Le Borgne, J.F., Mauon, N.* **210**, 198
- A newborn Trapezium within a bipolar nebula  
*Neckel, T., Staude, H.J., Meisenheimer, K., Chini, R., Güsten, R.* **210**, 378
- Linear polarization of the hydrogen H $\alpha$  line in filaments. I. Theoretical investigation  
*Bommier, V., Landi Degl'Innocenti, E., Sahal-Bréchet, S.* **211**, 230
- A parametric survey of model solar fluxtubes  
*Steiner, O., Pizzo, V.J.* **211**, 447
- The internal magnetic field distribution and the diameters of solar magnetic elements  
*Zayer, I., Solanki, S.K., Stenflo, J.O.* **211**, 463

- Polarimetry of grains in the coma of P/Halley. II. Interpretation  
*Dollfus, A.* **213**, 469
- Polarization characteristics of galactic B[e] stars  
*Zickgraf, F.-J., Schulte-Ladbeck, R.E.* **214**, 274
- CN 1-1: a bipolar type I planetary nebula  
*Bhatt, H.C.* **214**, 331
- Strong magnetic fields in interstellar H<sub>2</sub>O maser clumps  
*Fiebig, D., Güsten, R.* **214**, 333
- Polarimetry of comet Bradfield (1987s)  
*Kikuchi, S., Mikami, Y., Mukai, T., Mukai, S.* **214**, 386
- Linear polarization of Babcock's star  
*Breger, M., Weiss, W.W., Wills, B.J.* **215**, 48
- Long-term polarimetric behaviour of the carbon Mira R Leporis  
*Raveendran, A.V., Kameswara Rao, N.* **215**, 63
- The spectral variation of polarization due to magnetic intensification  
*Leroy, J.L.* **215**, 360
- Polarized radio emission from NGC 4945  
*Harnett, J.I., Haynes, R.F., Klein, U., Wielebinski, R.* **216**, 39
- Some comments on the methods for measuring magnetic fields in late-type stars  
*Landolfi, M., Landi Degl'Innocenti, M., Landi Degl'Innocenti, E.* **216**, 113
- The magnetic field structures in two nearby spiral galaxies. I. The axisymmetric spiral magnetic field in IC 342  
*Krause, M., Hummel, E., Beck, R.* **217**, 4
- The magnetic field structures in two nearby spiral galaxies. II. The bisymmetric spiral magnetic field in M81  
*Krause, M., Beck, R., Hummel, E.* **217**, 17
- Molecular band polarization in comet P/Halley  
*Sen, A.K., Joshi, U.C., Deshpande, M.R.* **217**, 307
- Arcs around SN 1987 A  
*Katz, J.I.* **218**, 289
- Observations on the variability of linear polarization in late-type dwarf stars  
*Huovelin, J., Linnaluoto, S., Tuominen, I., Virtanen, H.* **218**, 340; **78**, 129
- Cyclotron spectrum from a dipole magnetic field accretion column  
*Canalle, J.B.G., Opher, R.* **219**, 334
- A search for time variability and its possible regularities in linear polarization of Be stars  
*Huang, L., Hsu, J.C., Guo, Z.H.* **219**, 364; **78**, 431
- Detection of optical polarization in the 3C 66 B jet  
*Fraix-Burnet, D., Nieto, J.-L., Poulain, P.* **221**, L1
- CCD observations of bipolar nebulae. IV. S 106  
*Aspin, C., McLean, I.S., Schwarz, H.E., McCaughrean, M.J.* **221**, 100
- Stokes V asymmetry and shift of spectral lines  
*Grossmann-Doerth, U., Schüssler, M., Solanki, S.K.* **221**, 338
- High-resolution polarization observations of M31. I. Structure of the magnetic field in the southwestern arm  
*Beck, R., Loiseau, N., Hummel, E., Berkhuijsen, E.M., Gräve, R., Wielebinski, R.* **222**, 58
- A polarimetric study of the magnetic cataclysmic binary BL Hy-dri  
*Schwöpe, A.D., Beuermann, K.* **222**, 132
- On the generation of the net circular polarization observed in solar faculae  
*Sánchez-Almeida, J., Collados, M., del Toro Iniesta, J.C.* **222**, 311
- Polarimetry of solar-type stars and magnetic field diagnostics  
*Leroy, J.L., Le Borgne, J.F.* **223**, 336
- Optical polarization of the M87 jet  
*Fraix-Burnet, D., Le Borgne, J.-F., Nieto, J.-L.* **224**, 17
- The polarized internal radiation field of a planetary atmosphere  
*Stammes, P., de Haan, J.F., Hovenier, J.W.* **225**, 239
- Zeeman-Doppler imaging of active stars. I. Basic principles  
*Semel, M.* **225**, 456
- Zeeman-Doppler imaging of active stars. II. Numerical simulation and first observational results  
*Donati, J.-F., Semel, M., Praderie, F.* **225**, 467
- Rapid radio polarization variability in the quasar 0917+624  
*Quirrenbach, A., Witzel, A., Qian, S.J., Krichbaum, T., Hummel, C.A., Alberdi, A.* **226**, L1
- A simple method for calculating the H-matrix for molecular scattering  
*de Rooij, W.A., Bosma, P.B., van Hooff, J.P.C.* **226**, 347
- Radio continuum observations of the galactic centre at 4.75 and 10.7 GHz  
*Seiradakis, J.H., Reich, W., Wielebinski, R., Lasenby, A.N., Yussef-Zadeh, F.* **226**, 421; **81**, 291
- Positions**; see Astrometry; Fundamental stars and other objects
- Proper motions**; see Astrometry; Fundamental stars and other objects
- Protostars**; see Stars: pre-main-sequence; Interstellar medium: clouds; Interstellar medium: kinematics and dynamics of
- Pulsars: general**
- Implications of the millimeter emission from Supernova 1987 A  
*Salvati, M., Pacini, F., Oliva, E., Bandiera, R.* **208**, L5
- Supernova 1987 A: envelope metallicity and the nature of the soft X-ray component  
*Mastichiadis, A., Kylafis, N., Ventura, J.* **208**, L11
- The relativistic "looks" of a neutron star  
*Nollert, H.-P., Ruder, H., Herold, H., Kraus, U.* **208**, 153
- Photoproduction of high-frequency gravitational radiation by galactic and extragalactic sources  
*Papini, G., Valluri, S.-R.* **208**, 345
- Soft X-ray observations of the Vela pulsar PSR 0833-45  
*Ögelmann, H., Zimmermann, H.-U.* **214**, 179
- Recycled radiopulsar reservation in the P- $\dot{P}$  diagram  
*Kolosov, D.E., Lipunov, V.M., Postnov, K.A., Prokhorov, M.E.* **215**, L21
- An improved technique for the search for optical emission from radio pulsars, and its application to PSR 0301+19, 1919+21 and 2303+30  
*Perryman, M.A.C., Jakobsen, P., Colina, L., Lelièvre, G., Macchetto, F., Nieto, J.L., di Serego Alighieri, S.* **215**, 195
- The birthrates of galactic low mass binary radio pulsars and their progenitor systems  
*Coté, J., Pylyser, E.H.P.* **218**, 131
- Asymptotic analysis of resonance polarization and escape probability approximations  
*Faurobert-Scholl, M., Frisch, H.* **219**, 338
- A powerful test for weak periodic signals with unknown light curve shape in sparse data  
*De Jager, O.C., Swanepoel, J.W.H., Raubenheimer, B.C.* **221**, 180
- Gamma-ray emission from pulsars  
*Yongheng Zhao, Tan Lu, Keliang Huang, Jianlong Lu, Qiuhe Peng* **223**, 147



The relation between orbital and spin periods in massive X-ray binaries

*Waters, L.B.F.M., van Kerkwijk, M.H.* **223**, 196

Effects of radiation damping on particle motion in pulsar vacuum fields

*Finkbeiner, B., Herold, H., Ertl, T., Ruder, H.* **225**, 479

#### Pulsars: individual

##### E 2259+586

A precessing neutron star model for E 2259+586

*Carlini, A., Treves, A.* **215**, 283

##### Eclipsing pulsar 1957+20

Possible gravitational amplification in the binary pulsar 1957+20

*Schneider, J.* **214**, 1

##### G 18.95-1.1

A study of the composite supernova remnant G 18.95-1.1

*First, E., Hummel, E., Reich, W., Sofue Y., Sieber, W., Reif, K., Dettmar, R.-J.* **209**, 361

##### PSR 0021-72A

The new binary millisecond pulsar PSR 0021-72 A: a laboratory for gravitational physics

*Wijers, R.A.M.J.* **209**, L1

#### Vela

Soft X-ray observations of the Vela pulsar PSR 0833-45

*Ögelmann, H., Zimmermann, H.-U.* **214**, 179

#### Quasars: general

The evolution of the Eddington ratio for active galactic nuclei

*Padovani, P.* **209**, 27

The stability of isotropic distribution functions of relativistic electrons. II. Oblique propagating Langmuir waves in an electron-proton plasma

*Lesch, H., Crusius, A., Schlickeiser, R.* **209**, 427

Constraints on integrated nuclear rotation measures in core-dominated active galactic nuclei

*O'Dea, C.P.* **210**, 35

Neutrons from active galactic nuclei

*Kirk, J.G., Mastichiadis, A.* **213**, 75

Gravitational micro-lensing due to an ensemble of compact objects with different masses

*Kayser, R., Weiss, A., Refsdal, S., Schneider, P.* **214**, 4

The statistical properties of gravitational lenses of galaxies and quasars

*Xiangping Wu* **214**, 43

No quasar clustering at  $z > 2$

*Yaoquan Chu, Xingfen Zhu* **215**, 14

Quasars in the field of SA 94. III. A colour survey

*Cristiani, S., Barbieri, C., Iovino, A., La Franca, F., Nota, A.* **215**, 409; **77**, 161

Correlations in the absorption lines of the quasar Q 0420-388

*Hongguang Bi, Börner, G., Yaoquan Chu* **218**, 19

The luminous quasar HS 1700+6416 and the shape of the "big bump" below 500 Å

*Reimers, D., Clavel, J., Groote, D., Engels, D., Hagen, H.J., Naylor, T., Wamsteker, W., Hopp, U.* **218**, 71

The nature of radio-quiet quasars

*Chini, R., Kreysa, E., Biermann, P.L.* **219**, 87

Intermediate resolution spectra of quasars with  $z > 2$

*Ulrich, M.-H.* **220**, 71

Amplification near gravitational lens caustics

*Kayser, R., Witt, H.J.* **221**, 1

870 and 1300  $\mu\text{m}$  observations of radio quasars

*Chini, R., Biermann, P.L., Kreysa, E., Gemünd, H.-P.* **221**, L3

The existence of very large-scale structures in the universe

*Goicoechea, L.J., Martin-Mirones, J.M.* **221**, 197

Photomeson production in active galactic nuclei

*Mannheim, K., Biermann, P.L.* **221**, 211

The number excess of galaxies around high redshift quasars

*Schneider, P.* **221**, 221

The periodicity in the redshift distribution of the Lyman-alpha forest

*Yaoquan Chu, Xingfen Zhu* **222**, 1

Galaxies near distant quasars: observational evidence for statistical gravitational lensing (Part II)

*Fugmann, W.* **222**, 45

Electron-ion coupling in Compton-heated plasmas

*Schmutzler, T., Lesch, H.* **223**, 71

Chemical evolution of high redshift galaxies

*Fritze-v.-Alvensleben, U., Krüger, H., Fricke, K.J., Loose, H.-H.* **224**, L1

The wind and shock model for quasars: confrontation with observations of 3C 273

*Courvoisier, T.J.-L., Camenzind, M.* **224**, 10

Two-fluid model of superluminal radio sources: application to cosmology

*Pelletier, G., Roland, J.* **224**, 24

The gravitational lens hypothesis for 0846+51 W1 supported by new observations

*Stickel, M., Fried, J.W., Kühr, H.* **224**, L27

The optical variability of 3C 345

*Kidger, M.R.* **226**, 9

0309+411, an Mpc-sized core-dominated radio galaxy/quasar

*de Bruyn, A.G.* **226**, L13

A catalogue of extended ionized nebulosities around active galactic nuclei

*Durret, F.* **226**, 418; **81**, 253

#### Quasars: individual

##### AO 0235+164

The 1987 outburst of the BL Lacertid AO 0235+164

*Webb, J.R., Smith, A.G.* **220**, 65

##### Einstein Cross 2237+030

Observations of the Einstein Cross 2237+030 with the TIGER Integral Field Spectrograph

*Adam, G., Bacon, R., Courtès, G., Georgelin, Y., Monnet, G., Pécontal, E.* **208**, L15

##### HS 1700+6416

The luminous quasar HS 1700+6416 and the shape of the "big bump" below 500 Å

*Reimers, D., Clavel, J., Groote, D., Engels, D., Hagen, H.J., Naylor, T., Wamsteker, W., Hopp, U.* **218**, 71

##### NRAO 140

A method to estimate the motion of unresolved VLBI components in extragalactic radio sources. The case of NRAO 140

*Charlot, P., Hough, D.H., Lestrade, J.-F.* **211**, 261

**Q 0420-388**

Correlations in the absorption lines of the quasar Q0420-388  
*Hongguang Bi, Börner, G., Yaoquan Chu* **218**, 19

**0846+51W1**

The gravitational lens hypothesis for 0846+51 W1 supported by new observations

*Stickel, M., Fried, J.W., Kühr, H.* **224**, L27

**0917+624**

Numerical simulations of scattering in the interstellar medium applied to rapid radio variability in the quasar 0917+624

*Wambsganss, J., Schneider, P., Quirrenbach, A., Witzel, A.* **224**, L9

Rapid radio polarization variability in the quasar 0917+624

*Quirrenbach, A., Witzel, A., Qian, S.J., Krichbaum, T., Hummel, C.A., Alberdi, A.* **226**, L1

**0957+561**

The value of the time delay  $\Delta T(A, B)$  for the "double" quasar 0957+561 from optical photometric monitoring

*Vanderriest, C., Schneider, J., Herpe, G., Chevreton, M., Moles, M., Wlérick, G.* **215**, 1

**3C 138**

Three prototype compact steep spectrum radio sources

*Fanti, C., Fanti, R., Parma, P., Venturi, T., Schilizzi, R.T., Nan Rendong, Spencer, R.E., Muxlow, T.W.B., van Breugel, W.* **217**, 44

**3C 273**

Image deconvolution applied to the 3C 273 jet

*Fraix-Burnet, D., Nieto, J.-L., Roques, S.* **217**, 387

The wind and shock model for quasars: confrontation with observations of 3C 273

*Courvoisier, T.J.-L., Camenzind, M.* **224**, 10

**3C 287**

Three prototype compact steep spectrum radio sources

*Fanti, C., Fanti, R., Parma, P., Venturi, T., Schilizzi, R.T., Nan Rendong, Spencer, R.E., Muxlow, T.W.B., van Breugel, W.* **217**, 44

**3C 345**

Radio source structure from geodetic VLBI observations: evolution of the quasar 3C 345 at 8 GHz

*Tang, G., Rönnäng, B., Bååth, L.* **216**, 31

The optical variability of 3C 345

*Kidger, M.R.* **226**, 9

**4C 39.25**

The peculiar superluminal radio source 4C 39.25: observations and model

*Marcaide, J.M., Alberdi, A., Elósegui, P., Schalinski, C.J., Jackson, N., Witzel, A.* **211**, L23

**Quasars: jets of**

A method to estimate the motion of unresolved VLBI components in extragalactic radio sources. The case of NRAO 140

*Charlot, P., Hough, D.H., Lestrade, J.-F.* **211**, 261

Synchrotron emission spectra from shockwaves in active galactic nuclei: an energy and space dependent diffusion coefficient

*Fritz, K.D.* **214**, 14

Three prototype compact steep spectrum radio sources

*Fanti, C., Fanti, R., Parma, P., Venturi, T., Schilizzi, R.T., Nan Rendong, Spencer, R.E., Muxlow, T.W.B., van Breugel, W.* **217**, 44

870 and 1300  $\mu$ m observations of radio quasars

*Chini, R., Biermann, P.L., Kreysa, E., Gemünd, H.-P.* **221**, L3

Three dimensional motion of astrophysical jets

*Zaninetti, L.* **221**, 204

Electron-ion coupling in Compton-heated plasmas

*Schmutzler, T., Lesch, H.* **223**, 71

Simulations of the flux contours of astrophysical jets

*Zaninetti, L.* **223**, 369

Collective plasma processes in extragalactic radio sources

*Lesch, H., Appl, S., Camenzind, M.* **225**, 341

Rapid radio polarization variability in the quasar 0917+624

*Quirrenbach, A., Witzel, A., Qian, S.J., Krichbaum, T., Hummel, C.A., Alberdi, A.* **226**, L1

**Quasars: redshifts of**

Quasars in the field of SA 94. III. A colour survey

*Cristiani, S., Barbieri, C., Iovino, A., La Franca, F., Nota, A.* **215**, 409; 77, 161

Discovery of two bright low-redshift quasars by the Hamburg Quasar Survey

*Groote, D., Heber, U., Jordan, S.* **223**, L1

Optical spectroscopy of 1 Jy BL Lacertae objects and flat spectrum radio sources

*Stickel, M., Fried, J.W., Kühr, H.* **223**, 383; **80**, 103

**Radial velocities:** see also Galaxy (the): kinematics and dynamics of; Galaxies: redshifts of; Quasars: redshift of

The Baade-Wesselink method applied to field RR Lyrae stars.

II. SW Andromedae, SW Draconis, and SS Fornacis

*Cacciari, C., Clementini, G., Prevot, L., Buser, R.* **209**, 141

The Baade-Wesselink method applied to field RR Lyrae stars.

III. YZ Capricorni, RV Phoenicis, and V440 Sagittarii

*Cacciari, C., Clementini, G., Buser, R.* **209**, 154

Blue stragglers and the binary hypothesis

*Manteiga, M., Pickles, A.J., Martinez Roger, C.* **210**, 66

Absolute dimensions of eclipsing binaries. XIV. UX Mensae

*Andersen, J., Clausen, J.V., Magain, P.* **211**, 346

Absolute dimensions of eclipsing binaries. XV. EM Carinae

*Andersen, J., Clausen, J.V.* **213**, 183

Studies of dynamical properties of globular clusters. V. Implications of the observed flat MS mass function in 47 Tucanae

*Meylan, G.* **214**, 106

The structure of the Small Magellanic Cloud

*Martin, N., Maurice, E., Lequeux, J.* **215**, 219

Fundamental parameters for the W Serpentis stars. II. RX Casiopeiae

*Andersen, J., Pavlovski, K., Pirola, V.* **215**, 272

The region of formation of the ultraviolet high temperature resonance lines in the eclipsing binary  $\beta$  Persei (Algol)

*Brandt, E., Garcia, L.G., Kondo, Y., Sahade, J.* **215**, 331

W Sagittarii: pulsation and orbit

*Babel, J., Burki, G., Mayor, M., Waelkens, C., Chmielewski, Y.* **216**, 125

Improved orbital parameters for the binary Cepheid T Monocerotis

*Gieren, W.P.* **216**, 135

Orbital elements for double stars of Population II. The double-line high-velocity system HD 113083

*Lindgren, H., Ardeberg, A., Zuiderwijk, E.* **218**, 111

- Red giants in open clusters. I. Binarity and stellar evolution in five Hyades-generation clusters: NGC 2447, 2539, 2632, 6633 and 6940  
*Mermilliod, J.-C., Mayor, M.* **219**, 125
- The pre-main-sequence binary system AK Scorpii  
*Andersen, J., Lindgren, H., Hazen, M.L., Mayor, M.* **219**, 142
- BVR photoelectric photometry of late-type stars and a compilation of other data in the Small Magellanic Cloud  
*Maurice, E., Bouchet, P., Martin, N.* **219**, 365; **78**, 445
- Red giants in open clusters. II. Orbits of ten spectroscopic binaries in NGC 2360, 2437, 2447, 5822, 5823, and 6475  
*Mermilliod, J.-C., Mayor, M., Andersen, J., Nordström, B., Lindgren, H., Duquennoy, A.* **220**, 341; **79**, 11
- Search for radial velocity variations in rapidly oscillating Ap stars using the Fabry-Perot interferometric stellar oscillation spectrometer  
*Belmonte, J.A., Bell, C.R., Leeper, M., Pallé, P.L., Pietraszewski, K.A.R.B., Renton, R.E., Roca Cortés, T.* **221**, 41
- Erratum: Radial velocities. II. Ground based measurements for Hipparcos  
*Fehrenbach, Ch., Dufhot, M., Burnage, R., Mannone, C., Peton, A., Genty, V.* **224**, 367; **80**, 433
- Radial velocities of southern stars obtained with the photoelectric scanner Coravel. VIII. Radial velocity variations of eleven Cepheids in the Large and Small Magellanic Clouds  
*Imbert, M., Andersen, J., Ardeberg, A., Duquennoy, A., Lindgren, H., Maurice, E., Mayor, M., Mermilliod, J.C., Nordström, B., Prévot, L.* **226**, 421; **81**, 339
- Radiation mechanisms: general**
- Photoproduction of high-frequency gravitational radiation by galactic and extragalactic sources  
*Papini, G., Valluri, S.-R.* **208**, 345
- A combined radio and X-ray observation of Algol  
*van den Oord, G.H.J., Kuijpers, J., White, N.E., van der Hulst, J.M., Culhane, J.L.* **209**, 296
- X-ray emission from  $\gamma$ -ray bursters  
*Hameury, J.M., Lasota, J.P.* **211**, L15
- Raman scattering as a diagnostic possibility in astrophysics  
*Nussbaumer, H., Schmid, H.M., Vogel, M.* **211**, L27
- PeV inverse Compton gamma rays from Cygnus X-3  
*Schlickeiser, R.* **213**, L23
- LMC X-2: an extragalactic bulge-type source  
*Bonnet-Bidaud, J.M., Motch, C., Beuermann, K., Pakull, M.W., Parmar, A.N., van der Klis, M.* **213**, 97
- Intermediate-infrared excesses of barium stars  
*Hakkila, J.* **213**, 204
- Efficient computation of electron-electron bremsstrahlung emission in a hot thermal plasma  
*Haug, E.* **218**, 330
- 230 GHz observations of the radio galaxies Cygnus A and Virgo A  
*Salter, C.J., Chini, R., Haslam, C.G.T., Junor, W., Kreysa, E., Mezger, P.G., Spencer, R.E., Wink, J.E., Zylka, R.* **220**, 42
- Photomeson production in active galactic nuclei  
*Mannheim, K., Biermann, P.L.* **221**, 211
- Synchrotron-cooling-included fine structure in extragalactic radio sources  
*Achterberg, A.* **221**, 364
- Gamma-ray emission from pulsars  
*Yongheng Zhao, Tan Lu, Keliang Huang, Jianlong Lu, Qiuhe Peng* **223**, 147
- The wind and shock model for quasars: confrontation with observations of 3C 273  
*Courvoisier, T.J.-L., Camenzind, M.* **224**, 10
- Simple non-thermal models for the quiescent radio emission of dMe flare stars  
*White, S.M., Kundu, M.R., Jackson, P.D.* **225**, 112
- Turbulent scattering of high-frequency radiation in accretion discs  
*Xiao-qing Li* **225**, 555
- X-ray spectroscopy of RS CVn stars with EXOSAT  
*Pasquini, L., Schmitt, J.H.M.M., Pallavicini, R.* **226**, 225
- Radiation mechanisms: synchrotron radiation**
- Implications of the millimeter emission from Supernova 1987 A  
*Salvati, M., Pacini, F., Oliva, E., Bandiera, R.* **208**, L5
- Synchrotron radiation treated by the Weizsäcker-Williams method of virtual quanta  
*Lieu, R., Axford, W.I., Quenby, J.J.* **208**, 351
- The stability of isotropic distribution functions of relativistic electrons. II. Oblique propagating Langmuir waves in an electron-proton plasma  
*Lesch, H., Crusius, A., Schlickeiser, R.* **209**, 427
- Determination of the level of the MHD turbulence in 4C 21.44  
*Roland, J., Rhee, G.F.R.N.* **213**, 10
- Synchrotron emission spectra from shockwaves in active galactic nuclei: an energy and space dependent diffusion coefficient  
*Fritz, K.D.* **214**, 14
- Polarized radio emission from NGC 4945  
*Harnett, J.I., Haynes, R.F., Klein, U., Wiełebinski, R.* **216**, 39
- The correlation between radio and far-infrared emission for disk galaxies: a calorimeter theory  
*Völk, H.J.* **218**, 67
- Active galactic nuclei as accreting turbulent synchrotron-self-Compton sources  
*Atoyan, A.M., Nahapetian, A.* **219**, 53
- The synchrotron spectra of radio hot spots  
*Meisenheimer, K., Röser, H.-J., Hiltner, P.R., Yates, M.G., Longair, M.S., Chini, R., Perley, R.A.* **219**, 63
- The origin of flat radio spectra in shell-type supernova remnants  
*Schlickeiser, R., Fürst, E.* **219**, 192
- 870 and 1300  $\mu$ m observations of radio quasars  
*Chini, R., Biermann, P.L., Kreysa, E., Gemünd, H.-P.* **221**, L3
- High-resolution polarization observations of M31. I. Structure of the magnetic field in the southwestern arm  
*Beck, R., Loiseau, N., Hummel, E., Berkhuijsen, E.M., Gräve, R., Wiełebinski, R.* **222**, 58
- Simulations of the flux contours of astrophysical jets  
*Zaninetti, L.* **223**, 369
- Synchrotron pair cascades in strong magnetic fields  
*Baring, M.G.* **225**, 260
- Radiation transfer; see also Lines, formation**
- Radiation hydrodynamics of the boundary layer in accretion disks. I. Numerical methods  
*Kley, W.* **208**, 98
- Radiative transfer in supernova-like envelopes: curvature and diffusion effects  
*Simonneau, E., Isern, J., López, R.* **208**, 166
- Power-law dependence of the pressure broadening of spectral lines on temperature  
*Bielski, A., Bobkowski, R., Szudy, J.* **208**, 357
- Broadening of iron resonance lines in X-ray burst spectra  
*Madej, J.* **209**, 226

- Non-LTE line formation in early B and late O stars. IV. Singly ionized nitrogen  
*Becker, S.R., Butler, K.* **209**, 244
- Time-dependent effects of acoustic wave heating and molecular cooling in the outer atmosphere of Arcturus  
*Cuntz, M., Muchmore, D.* **209**, 305
- Multiplets in multi-level non-LTE radiative transfer  
*Takeda, Y.* **211**, 383
- The nature of absorption features in the spectra of gamma-ray bursts  
*Bisnovatyi-Kogan, G.S., Illarionov, A.F.* **213**, 107
- Operator perturbation method for multi-level line transfer with partial redistribution  
*Uitenbroek, H.* **213**, 360
- A numerical simulation study of solar granular convection in cells of different horizontal dimension  
*Steffen, M., Ludwig, H.-G., Krüß, A.* **213**, 371
- The photodissociation of water in cometary atmospheres  
*Crovisier, J.* **213**, 459
- Excitation of HCN hyperfine lines in circumstellar envelopes: redshift and molecular abundance  
*Truong-Bach, Nguyen-Q-Rieu* **214**, 267
- The relative importance of collisional and chemical pumping and radiative transfer effects in cosmic OH sources  
*Piehler, G., Kegel, W.H.* **214**, 339
- Relations involving the spherical albedo and other photometric quantities of planets with thick atmospheres  
*Hovenier, J.W., Hage, J.I.* **214**, 391
- The nature of the 2.8- $\mu$ m emission feature in cometary spectra  
*Bockelée-Morvan, D., Crovisier, J.* **216**, 278
- An efficient method for the evaluation of general redistribution integration weights  
*Uitenbroek, H.* **216**, 310
- Freely propagating polarized radiation in curved space-times  
*Bildhauer, S.* **219**, 25
- Eclipse cross-sections of cool components in double star systems  
*Islaker, H., Nussbaumer, H., Vogel, M.* **219**, 271
- Radiative shocks in atomic and molecular stellar atmospheres. III. The shock wave velocity problem in Mira stars  
*Gillet, D., Lafon, J.-P.J., David, P.* **220**, 185
- New developments in the discrete ordinate method for the resolution of the radiative transfer equation  
*Ben Jaffel, L., Vidal-Madjar, A.* **220**, 306
- Efficiency of 1612 MHz maser emission from OH/IR stars  
*Röttgering, H.J.A.* **222**, 125
- Towards a self-consistent description of accretion columns. IV. Iterative scattering solution of radiative transfer and effects of bulk motion  
*Maile, T., Bock, U., Herold, H., Rebetzky, A., Ruder, H., Ventura, J., Wolf, K.* **223**, 251
- The origin and the diagnostic capabilities of the Stokes *V* asymmetry observed in solar faculae and the network  
*Solanki, S.K.* **224**, 225
- H Lyman- $\alpha$  emission at Neptune: Voyager prediction  
*McConnell, J.C., Parkinson, C.D., Ben-Jaffel, L., Emerich, C., Prangée, R., Vidal-Madjar, A.* **225**, L9
- The polarized internal radiation field of a planetary atmosphere  
*Stammes, P., de Haan, J.F., Hovenier, J.W.* **225**, 239
- Observations of the He I 10830 Å line in main-sequence O9-B9 stars and comparison with non-LTE predictions  
*Lennon, D.J., Dufton, P.L.* **225**, 439
- Unified NLTE model atmospheres including spherical extension and stellar winds: method and first results  
*Gabler, R., Gabler, A., Kudritzki, R.P., Puls, J., Pauldrach, A.W.A.* **226**, 162
- Non-LTE model atmosphere calculations with approximate lambda operators: application of tridiagonal operators  
*Werner, K.* **226**, 265
- A simple method for calculating the *H*-matrix for molecular scattering  
*de Rooij, W.A., Bosma, P.B., van Hooff, J.P.C.* **226**, 347
- ### Radio continuum
- The magnetic field of NGC 6946  
*Harnett, J.I., Beck, R., Bucilowski, U.R.* **208**, 32
- 2CG013: a "monoenergetic" source of cosmic rays?  
*Özel, M.E., Ormes, J.F.* **208**, 247
- A study of the composite supernova remnant G 18.95-1.1  
*Füß, E., Hummel, E., Reich, W., Sofue Y., Sieber, W., Reif, K., Dettmar, R.-J.* **209**, 361
- Broad-band spectrum of dMe star radio emission  
*Güdel, M., Benz, A.O.* **211**, L5
- Linearly polarized radioemission from the anomalous arms in NGC 4258 (M 106)  
*Hummel, E., Krause, M., Lesch, H.* **211**, 266
- A new radio continuum survey of the Magellanic Clouds at 1.4 GHz. II. The radio morphology, and thermal and nonthermal emission of the LMC  
*Klein, U., Wielebinski, R., Haynes, R.F., Malin, D.F.* **211**, 280
- M 82, the Galaxy, and the dependence of cosmic ray energy production on the supernova rate  
*Völk, H.J., Klein, U., Wielebinski, R.* **213**, L12
- The Small Magellanic Cloud observed at 45 MHz  
*Alvarez, H., Aparici, J., May, J.* **213**, 13
- Solar wind control of Jupiter's hectometric radio emission  
*Barrow, C.H., Desch, M.D.* **213**, 495
- Millimeter continuum observations of the active star-forming core of M82  
*Thronson, H.A., Jr., Walker, C.K., Walker, C.E., Maloney, P.* **214**, 29
- The submillimeter continuum of active galaxies  
*Chini, R., Krügel, E., Kreysa, E., Gemünd, H.-P.* **216**, L5
- Polarized radio emission from NGC 4945  
*Harnett, J.I., Haynes, R.F., Klein, U., Wielebinski, R.* **216**, 39
- Radio measurements in the fields of  $\gamma$ -ray sources. III. The star formation region  $\rho$ -Ophiuchi  
*Schlickeiser, R., Harwit, M., Özel, M.E., Sieber, W., Younis, S.M., Schinckel, A.* **216**, 197
- The magnetic field structures in two nearby spiral galaxies. I. The axisymmetric spiral magnetic field in IC 342  
*Krause, M., Hummel, E., Beck, R.* **217**, 4
- Radio continuum emission from the pre-main sequence Herbig Ae star AB Aurigae  
*Güdel, M., Benz, A.O., Catala, C., Praderie, F.* **217**, L9
- The magnetic field structures in two nearby spiral galaxies. II. The bisymmetric spiral magnetic field in M 81  
*Krause, M., Beck, R., Hummel, E.* **217**, 17
- Three prototype compact steep spectrum radio sources  
*Fanti, C., Fanti, R., Parma, P., Venturi, T., Schilizzi, R.T., Nan Rendong, Spencer, R.E., Muxlow, T.W.B., van Breugel, W.* **217**, 44
- VLBI observations of  $\theta^1$  Orionis A  
*Felli, M., Massi, M., Churchwell, E.* **217**, 179



- The correlation between radio and far-infrared emission for disk galaxies: a calorimeter theory  
Völk, H.J. **218**, 67
- The DRAO Galactic plane survey. I.  $l = 140^\circ$ ,  $b = 0^\circ$   
Green, D.A. **218**, 343; **78**, 277
- Is HS 240 an interstellar bubble?  
Wisotzki, L., Wendker, H.J. **221**, 311
- High-resolution polarization observations of M31. I. Structure of the magnetic field in the southwestern arm  
Beck, R., Loiseau, N., Hummel, E., Berkhuijsen, E.M., Gräve, R., Wielebinski, R. **222**, 58
- Bipolar radio morphology in the compact nebula K 3-35  
Aaquist, O.B., Kwok, S. **222**, 227
- Radio continuum observations of comet P/Halley at 250 GHz  
Altenhoff, W.J., Huchtmeier, W.K., Kreysa, E., Schmidt, J., Schraml, J.B., Thum, C. **222**, 323
- The nature of the central source of the supernova remnant G 179.0+2.7  
Fürst, E., Reich, W., Kühr, H., Stickel, M. **223**, 66
- Observations of the submillimetre integrated galactic emission from the South Pole  
Pajot, F., Gispert, R., Lamarre, J.M., Peyturaux, R., Pomerantz, M.A., Puget, J.L., Serra, G., Maurel, C., Pfeiffer, R., Renault, J.C. **223**, 107
- Gamma-ray emission from pulsars  
Yongheng Zhao, Tan Lu, Kelian Huang, Jianlong Lu, Qiuhe Peng **223**, 147
- A catalogue of VLA radio continuum observations of planetary nebulae with the Very Large Array  
Zijlstra, A.A., Pottasch, S.R., Bignell, C. **223**, 378; **79**, 329
- Catalogue de vitesses radiales moyennes stellaires (catalogue sur bande magnétique)  
Barbier-Brossat, M. **223**, 381; **80**, 67
- Meter wavelength structures, flux densities and accurate positions of weak radio sources  
Akujor, C.E., Noshi, M.N., Kazès, I. **224**, 363; **80**, 215
- Observations at 90 and 142 GHz of nine extended galactic radio sources  
Salter, C.J., Emerson, D.T., Steppe, H., Thum, C. **225**, 167
- High resolution observations of the narrow angle tail radio galaxy in Abell 115  
Gregorini, L., Bondi, M. **225**, 333
- Jovian hectometric radiation: beaming, source extension, and solar wind control  
Ladreitner, H.P., Leblanc, Y. **226**, 297
- Radio continuum observations of four edge-on spiral galaxies  
Hummel, E., van der Hulst, J.M. **226**, 416; **81**, 51
- Radio continuum observations of the galactic centre at 4.75 and 10.7 GHz  
Seiradakis, J.H., Reich, W., Wielebinski, R., Lasenby, A.N., Yusef-Zadeh, F. **226**, 421; **81**, 291
- Radio galaxies; see Galaxies, radio**
- Radio lines: molecular**
- A detailed study of the OH megamaser galaxy IRAS 17208-0014  
Martin, J.M., Bottinelli, L., Dennefeld, M., Gouguenheim, L., Le Squeren, A.M. **208**, 39
- Outflow velocities from carbon stars  
Zuckerman, B., Dyck, H.M. **209**, 119
- C<sub>3</sub>H<sub>2</sub> observations in dense dark clouds  
Cox, P., Walmsley, C.M., Güsten, R. **209**, 382
- Molecular emission lines from the envelopes of evolved stars  
Sopka, R.J., Olofsson, H., Johansson, L.E.B., Nguyen-Q-Rieu, Zuckerman, B. **210**, 78
- HCN emission and nitrogen-bearing molecules in oxygen-rich circumstellar envelopes  
Nercessian, E., Guilloteau, S., Omont, A., Benayoun, J.J. **210**, 225
- CO outflow and properties of the molecular gas around the far-infrared point source IRAS 04325-1419 in Lynds 1642  
Liljeström, T., Mattila, K., Friberg, P. **210**, 337
- The structure of the molecular gas in the young planetary nebula NGC 2346  
Bachiller, R., Planesas, P., Martín-Pintado, J., Bujarrabal, V., Tafalla, M. **210**, 366
- Radio observations of CH in front of globular clusters and the galactic gas-to-dust ratio  
Mattila, K. **210**, 389
- Molecular clouds in irregular galaxies. I. An ultramassive complex in NGC 3077?  
Becker, R., Schilke, P., Henkel, C. **211**, L19
- $v = 3$ ,  $J = 1 - 0$  SiO maser emission from evolved stars  
Alcolea, J., Bujarrabal, V., Gallego, J.D. **211**, 187
- High spectral-resolution CO observations of NGC 6814 and NGC 7793  
Brand, J., Wouterloot, J.G.A., Becker, R., Stirpe, G.M. **211**, 315
- Observations of CO ( $J = 7 - 6$ ) in star-forming regions  
Krügel, E., Densing, R., Nett, H., Röser, H.P., Schäfer, F., Schmid-Burgk, J., Schwaab, G., van der Wal, P., Wattenbach, R. **211**, 419
- The L 1551 IRS 5 CO bipolar outflow: acceleration and origin  
Fridlund, C.V.M., Sandqvist, A., Nordh, H.L., Olofsson, G. **213**, 310
- The spatial relationship of OH and H<sub>2</sub>O masers  
Forster, J.R., Caswell, J.L. **213**, 339
- Search for water in comet P/Halley at 380 GHz  
Gulkis, S., Batelaan, P.D., Fierking, M.A., Klein, M.J., Kuiper, T.B.H., Pickett, H.M., Schaefer, M.M., Wannier, P., Bockelée-Morvan, D., Crovisier, J., Encrenaz, P.J., Zimmermann, P., Destombes, J.L. **213**, 465
- Excitation of HCN hyperfine lines in circumstellar envelopes: redshift and molecular abundance  
Truong-Bach, Nguyen-Q-Rieu **214**, 267
- The distribution of hot thermal methanol in Orion-KL  
Wilson, T.L., Johnston, K.J., Henkel, C., Menten, K.M. **214**, 321
- The gas-to-dust ratio and the molecular hydrogen content in galactic cirrus clouds  
Heithausen, A., Mebold, U. **214**, 347
- A new circumstellar maser: <sup>30</sup>SiO  
Barcia, A., Alcolea, J., Bujarrabal, V. **215**, L9
- CO observations of IRAS sources in Orion and Cepheus  
Wouterloot, J.G.A., Henkel, C., Walmsley, C.M. **215**, 131
- Extended CO ( $J = 7 - 6$ ) emission from Orion Molecular Cloud 1: hot ambient gas, two hot-outflow sources  
Schmid-Burgk, J., Densing, R., Krügel, E., Nett, H., Röser, H.P., Schäfer, F., Schwaab, G., van der Wal, P., Wattenbach, R. **215**, 150
- The Swedish-ESO Submillimetre Telescope (SEST)  
Booth, R.S., Delgado, G., Hagström, M., Johansson, L.E.B., Murphy, D.C., Olberg, M., Whyborn, N.D., Greve, A., Hansson, B., Lindström, C.O., Rydberg, A. **216**, 315

- Laboratory microwave spectroscopy of the  $C_3N$  radical in the vibrationally excited state  $v_5$   
 Mikami, H., Yamamoto, S., Saito, S., Guélin, M. **217**, L5
- Observations of the OH radio lines in comet P/Halley 1986 III  
 Gérard, E., Bockelée-Morvan, D., Bourgois, G., Colom, P., Crovisier, J. **217**, 392; 77, 379
- Search for water vapor masers in the direction of IRAS sources associated with H II regions and molecular clouds  
 Braz, M.A., Scalise, Jr., E., Gregorio Hetem, J.C., Monteiro do Vale, J.L., Gaylard, M. **217**, 393; 77, 465
- Irregular structure of the envelope around the carbon-rich star TX Piscium  
 Heske, A., te Lintel Hekkert, P., Maloney, P.R. **218**, L5
- Discovery of strong maser emission from HCN in IRC + 10216  
 Lucas, R., Cernicharo, J. **218**, L20
- CO along the minor axis of M 31  
 Sandqvist, Aa., Elfhag, T., Lindblad, P.O. **218**, 39
- Carbon monoxide emission from the Ring Nebula in Lyra  
 Bachiller, R., Bujarrabal, V., Martín-Pintado, J., Gómez-González, J. **218**, 252
- Abundant molecular gas in the starburst galaxy IRAS 0833+652  
 Wiklind, T. **219**, L11
- Rotating  $H^{13}CO^+$  disk and corotating  $H^{12}CO^+$  lobes in the L 1551 outflow source  
 Liljeström, T. **219**, L19
- CO and SiO thermal emission in evolved stars  
 Bujarrabal, V., Gómez-González, J., Planesas, P. **219**, 256
- $^{12}CO$  ( $J=1-0$ ) and ( $J=2-1$ ) mapping of the  $\zeta$  Ophiuchi diffuse cloud  
 Le Bourlot, J., Gérin, M., Pérault, M. **219**, 279
- HCN and HNC observations towards dark clouds  
 Harju, J. **219**, 293
- Dense molecular gas in galaxies: HCN,  $HCO^+$ , and CS in M 82 and NGC 253  
 Nguyen-Q-Rieu, Nakai, N., Jackson, J.M. **220**, 57
- Water-vapor maser emission from bright, unassociated IRAS point sources  
 Scalise, E., Jr., Rodriguez, L.F., Mendoza-Torres, E. **221**, 105
- Multi-line observations and analysis of the Sharpless 247/252 gas complex  
 Kömpe, C., Joncas, G., Baudry, A., Wouterloot, J.G.A. **221**, 295
- The detection of CN and HNC mm-wave absorption lines in spiral-arm gas clouds  
 Nyman, L.-A., Millar, T.J. **222**, 231
- High signal/noise  $^{13}CO$  observations of the bipolar outflow in L 1551  
 Fridlund, C.V.M., White, G.J. **223**, L13
- Carbon stars with oxygen-rich circumstellar envelopes?  
 Zuckerman, B., Maddalena, R.J. **223**, L20
- Carbon stars with oxygen-rich circumstellar envelopes!  
 de Jong, T. **223**, L23
- A search for  $H_2O$  maser emission in the Serpens region  
 Palla, F., Giovanardi, C. **223**, 267
- CO and IR in L 1228: extended bipolar molecular outflow and strongly self-absorbed  $^{12}CO$  emission  
 Haikala, L.K., Laureijs, R.J. **223**, 287
- 2-mm  $H_2CO$  emission in the Sgr A molecular complex at the Galactic Center  
 Sandqvist, Aa. **223**, 293
- A search for HCOCN in molecular clouds  
 Gerin, M., Combes, F., Encarnaz, P., Turner, B., Wootten, A., Bogey, M., Destombes, J.L. **224**, L24
- Zeeman splitting in interstellar molecules  
 Bel, N., Leroy, B. **224**, 206
- The molecular cloud content of early type galaxies. I. Detections and global properties  
 Wiklind, T., Henkel, C. **225**, 1
- Optical depth of molecular gas in starburst galaxies: Is M 82 the prototype?  
 Verter, F., Rickard, L.J. **225**, 27
- The interpretation of correlations between observed parameters of molecular clouds  
 Kegel, W.H. **225**, 517
- Dense gas in nearby galaxies. II. CS emission from spiral galaxies  
 Mauersberger, R., Henkel, C., Wilson, T.L., Harju, J. **226**, L5
- A reference catalogue of maser and thermal emission circumstellar SiO molecules  
 Engels, D., Heske, A. **226**, 421; **81**, 323
- Radio lines: recombination**
- H 166  $\alpha$  emission from the southern galactic plane  
 Cersosimo, J.C., Azcarate, I.N., Hart, L., Colomb, F.R. **208**, 239
- A physical analysis of S II and C II layers in four molecular cloud edges: NGC 3576, NGC 6334, S 87, and S 88  
 Vallée, J.P. **213**, 295
- The distribution and kinematics of the ionized gas in the galactic centre region  
 Schwarz, U.J., Bregman, J.D., van Gorkom, J.H. **215**, 33
- Radio recombination line observations of compact planetary nebulae  
 Garay, G., Gathier, R., Rodriguez, L.F. **215**, 101
- Time-variable recombination line emission in MWC 349  
 Martín-Pintado, J., Thum, C., Bachiller, R. **222**, L9
- Infrared and radio recombination line observations of DR 21  
 Roelfsema, P.R., Goss, W.M., Geballe, T.R. **222**, 247
- Magnetised molecular cloud edges  
 Vallée, J.P. **224**, 191
- Radio lines: 21-cm**
- A detailed study of the OH megamaser galaxy IRAS 17208-0014  
 Martín, J.M., Bottinelli, L., Dennefeld, M., Gougouenheim, L., Le Squeren, A.M. **208**, 39
- Galactic rotation curve in the range  $0.4 < R/R_0 < 1$  from neutral hydrogen 21 cm line profiles and the graphic variant of the Agekian et al. method  
 Teerikorpi, P. **209**, 46
- A study of the composite supernova remnant G 18.95-1.1  
 Fürst, E., Hummel, E., Reich, W., Sofue, Y., Sieber, W., Reif, K., Dettmar, R.-J. **209**, 361
- H I observations of galaxies in the Virgo cluster of galaxies. II. Global parameters of the galaxies  
 Huchtmeier, W.K., Richter, O.-G. **210**, 1
- Erratum: The H I-properties of bright southern galaxies  
 Becker, R., Mebold, U., Reif, K., van Woerden, H. **214**, 402
- The structure of the Small Magellanic Cloud  
 Martín, N., Maurice, E., Lequeux, J. **215**, 219
- High resolution H I observations of dark clouds. II. L 1551  
 van der Werf, P.P., Dewdney, P.E., Goss, W.M., Vanden Bout, P.A. **216**, 215

Large-scale properties of interstellar dust and gas in M33  
*Deul, E.R.* **218**, 78

The DRAO Galactic plane survey. I.  $l = 140^\circ$ ,  $b = 0^\circ$   
*Green, D.A.* **218**, 343; **78**, 277

A survey of several southern high-velocity complexes  
*Bojaja, E., Cappa de Nicolau, C.E., Martin, M.C., Morras, R., Olano, C.A., Pöppel, W.G.L.* **219**, 363; **78**, 345

Study of the fine structure in a high-velocity cloud  
*Cavarischia, G.A., Morras, R.* **219**, 364; **78**, 437

High resolution H I observations of H II regions. I. Orion A  
*van der Werf, P.P., Goss, W.M.* **224**, 209

The intricate kinematics of the Sb spiral galaxy NGC 2613  
*Bottema, R.* **225**, 358

#### Radio sources: general; see also individual objects

The role of refractive interstellar scintillation in the low frequency variability of extragalactic radio sources

*Spangler, S., Fanti, R., Gregorini, L., Padrielli, L.* **209**, 315

A method to estimate the motion of unresolved VLBI components in extragalactic radio sources. The case of NRAO 140  
*Charlot, P., Hough, D.H., Lestrade, J.-F.* **211**, 261

A model for radio emission from SN 1987 A  
*Manchanda, R.K., Sood, R.K., Waldron, L.* **211**, 353

Solar wind control of Jupiter's hectometric radio emission  
*Barrow, C.H., Desch, M.D.* **213**, 495

Radio surveys and source counts at 408 MHz and 1420 MHz towards the Abell 1314 cluster of galaxies  
*Vallée, J.P., Roger, R.S.* **213**, 520; **77**, 31

A Catalogue of Jovian decametric radio observations from January 1982 to December 1984

*Leblanc, Y., Gerbault, A., Lecacheux, A.* **217**, 392; **77**, 425

Optical positions of radio stars. I

*Costa, E., Loyola, P.* **218**, 340; **78**, 141

The DRAO Galactic plane survey. I.  $l = 140^\circ$ ,  $b = 0^\circ$   
*Green, D.A.* **218**, 343; **78**, 277

The nature of radio-quiet quasars

*Chini, R., Kreysa, E., Biermann, P.L.* **219**, 87

New radio observations of two supernova remnants in Cassiopeia: G 126.2+1.6 and G 127.1+0.5

*Joncas, G., Roger, R.S., Dewdney, P.E.* **219**, 303

Large-scale anisotropy in the sky distribution of extragalactic radio sources

*Shaver, P.A., Pierre, M.* **220**, 35

230 GHz observations of the radio galaxies Cygnus A and Virgo A

*Salter, C.J., Chini, R., Haslam, C.G.T., Junor, W., Kreysa, E., Mezger, P.G., Spencer, R.E., Wink, J.E., Zylka, R.* **220**, 42

870 and 1300  $\mu\text{m}$  observations of radio quasars

*Chini, R., Biermann, P.L., Kreysa, E., Gemünd, H.-P.* **221**, L3

Galaxies near distant quasars: observational evidence for statistical gravitational lensing (Part II)

*Fugmann, W.* **222**, 45

A celestial reference frame based on extragalactic radio sources

*Walter, H.G.* **223**, 376; **79**, 283

Multifrequency observations of the tailed radio source NGC 4869 in the Coma cluster

*Dallacasa, D., Feretti, L., Giovannini, G., Venturi, T.* **223**, 379; **79**, 391

Numerical simulations of scattering in the interstellar medium applied to rapid radio variability in the quasar 0917+624

*Wambsgans, J., Schneider, P., Quirrenbach, A., Witzel, A.* **224**, L9

Small-scale structure in the DR 21/DR 21 (OH) region: a high resolution continuum study at millimetre and submillimetre wavelengths

*Richardson, K.J., Sandell, G., Krisciunas, K.* **224**, 199

Optical positions of 21 radio sources in the Brorfelde system

*Geffert, M., Tucholke, H.-J., Walter, H.G., Moreno, M.A., Ivanova, V., Sinachopoulos, D.* **224**, 323

Meter wavelength structures, flux densities and accurate positions of weak radio sources

*Akujor, C.E., Noshi, M.N., Kazès, I.* **224**, 363; **80**, 215

Radio continuum observations of the galactic centre at 4.75 and 10.7 GHz

*Seiradakis, J.H., Reich, W., Wielebinski, R., Lasenby, A.N., Yusef-Zadeh, F.* **226**, 421; **81**, 291

#### Radio telescopes

Terrestrial transmitters as phase calibrators in disconnected interferometry

*Woan, G., Duffett-Smith, P.J.* **208**, 381

Application of Lagrangian multipliers in hybrid mapping

*Massi, M.* **208**, 392

The Swedish-ESO Submillimetre Telescope (SEST)

*Booth, R.S., Delgado, G., Hagström, M., Johansson, L.E.B., Murphy, D.C., Olberg, M., Whyborn, N.D., Greve, A., Hansson, B., Lindström, C.O., Rydberg, A.* **216**, 315

#### Reference systems

A compilation catalogue of positions of extragalactic radio sources

*Walter, H.G.* **210**, 455

Construction of an inertial coordinate system using a CCD

*Mao Wei, Wu Guangjie, Guo Xinjian, Xu Shui, Lu Ruwei* **215**, 190

#### Relativity

Observations of the Einstein Cross 2237+030 with the TIGER Integral Field Spectrograph

*Adam, G., Bacon, R., Courtès, G., Georgelin, Y., Monnet, G., Pécontal, E.* **208**, L15

The relativistic "looks" of a neutron star

*Nollert, H.-P., Ruder, H., Herold, H., Kraus, U.* **208**, 153

The behaviour of asymmetry and other profile parameters of the Fe I  $\lambda 5576.1$  Å line in solar regions of varying magnetic activity

*Immerschitt, S., Schröter, E.H.* **208**, 307

Photoproduction of high-frequency gravitational radiation by galactic and extragalactic sources

*Papini, G., Valluri, S.-R.* **208**, 345

The new binary millisecond pulsar PSR 0021-72 A: a laboratory for gravitational physics

*Wijers, R.A.M.J.* **209**, L1

Dissipative processes in relativistic magnetohydrodynamics

*Okamoto, I.* **211**, 476

The influence of relativistic kinematics on the asymmetry of spectral line profiles and the observed asymmetries in AGN's

*Mediavilla, E., Insertis, F.M.* **214**, 79

Photon surfing near compact accreting objects

*Icke, V.* **216**, 294

Equilibrium configuration for an inertially dragged viscous fluid around a slowly rotating compact object

*Prasanna, A.R.* **217**, 329

Towards the birth of gravitational astronomy. I. Number of events expected from gravitational wave detection by interferometry

*Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tourrenc, P.* **217**, 375

Towards the birth of gravitational astronomy. II. Directivity and number of events in coincidences expected from gravitational wave detection by interferometry

*Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tourrenc, P.* **217**, 381

How to determine a Tolman-Bondi universe from ideal observable and theoretical relations

*Rindler, W., Suson, D.* **218**, 15

Freely propagating polarized radiation in curved space-times

*Bildhauer, S.* **219**, 25

The gravitational lens effect of the Virgo Supercluster

*Xu Chongming, Fabbri, R., Wu Xuejun* **220**, 30

The concepts of International Atomic Time (TAI) and Terrestrial Dynamic Time (TDT)

*Huang, T.-Y., Zhu, J., Xu, B.-X., Zhang, H.* **220**, 329

Systems of selfgravitating classical particles with a cutoff in their distribution function

*Merafina, M., Ruffini, R.* **221**, 4

**Satellites**; see Planets and satellites

### Scintillation

Photometric and spectroscopic study of three candidate Herbig Ae/Be stars: HD 37411, HD 100546 and HD 104237

*Hu, J.Y., Thé, P.S., de Winter, D.* **208**, 213

The role of refractive interstellar scintillation in the low frequency variability of extragalactic radio sources

*Spangler, S., Fanti, R., Gregorini, L., Padrielli, L.* **209**, 315

Numerical simulations of scattering in the interstellar medium applied to rapid radio variability in the quasar 0917+624

*Wambsganss, J., Schneider, P., Quirrenbach, A., Witzel, A.* **224**, L9

### Seeing

Simulated annealing image reconstruction in photon-limited stellar speckle interferometry

*Navarro, R., Fuentes, F.J., Nieto-Vesperinas, M.* **208**, 374

Imagery with infrared arrays. I. Ground-based system and astronomical performances

*Lacombe, F., Tiphène, D., Rouan, D., Léna, P., Combes, M.* **215**, 211

Technical aspects of the speckle masking phase reconstruction algorithm

*Pehlemann, E., von der Lühe, O.* **216**, 337

**Erratum:** Simulated annealing image reconstruction in photon-limited stellar speckle interferometry

*Navarro, R., Fuentes, F.J., Nieto-Vesperinas, M.* **219**, 362

Solar feature correlation tracker for ground-based telescopes

*von der Lühe, O., Widener, A.L., Rimmele, Th., Spence, G., Dunn, R.B., Wiborg, P.* **224**, 351

The phase problem in optical interferometry: error analysis in the presence of photon noise

*Chelli, A.* **225**, 277

Comparison of optical measurements of seeing and calculations based on radiosonde data

*Hecquet, J., Klaus, V.* **225**, 585

### Shock waves

Models of head-on collisions between a white dwarf and a low-mass main-sequence star

*Różyczka, M., Yorke, H.W., Bodenheimer, P., Müller, E., Hashimoto, M.* **208**, 69

Time-dependent effects of acoustic wave heating and molecular cooling in the outer atmosphere of Arcturus

*Cuntz, M., Muchmore, D.* **209**, 305

On the origin of high energy cosmic rays. I. Pregalactic explosion

*Parvaneh, D.L., Schatzman, E., Lagage, P.O.* **213**, 287

Synchrotron emission spectra from shockwaves in active galactic nuclei: an energy and space dependent diffusion coefficient

*Fritz, K.D.* **214**, 14

Shock phenomena in the atmosphere of the RV Tauri star, R Scuti

*Gillet, D., Duquennoy, A., Bouchet, P., Gouiffes, C.* **215**, 316

X-ray emission from acoustically heated coronae

*Stepień, K., Ulmschneider, P.* **216**, 139

Particle acceleration at modified shock fronts. I. The power-law spectrum for relativistic flows

*Schneider, P., Kirk, J.G.* **217**, 344

Numerical simulation of the formation of shock waves in thin accretion disks and the resulting angular momentum transport

*Kaisig, M.* **218**, 102

The synchrotron spectra of radio hot spots

*Meisenheimer, K., Röser, H.-J., Hiltner, P.R., Yates, M.G., Longair, M.S., Chini, R., Perley, R.A.* **219**, 63

The H $\alpha$  profile of Algol

*Gillet, D., Mouchet, M., North, P.* **219**, 219

Radiative shocks in atomic and molecular stellar atmospheres.

III. The shock wave velocity problem in Mira stars

*Gillet, D., Lafon, J.-P.J., David, P.* **220**, 185

The chromospheric emission from acoustically heated stellar atmospheres

*Ulmschneider, P.* **222**, 171

Echelle observations of the high speed motions in the extreme bipolar nebula He2-111 (PK 315 - 0°1)

*Meaburn, J., Walsh, J.R.* **223**, 277

Simplified models for the evolution of supernova remnants including particle acceleration

*Drury, L.O'C., Markiewicz, W.J., Völk, H.J.* **225**, 179

Shock waves of large amplitude in the atmospheres of RR Lyrae stars?

*Gillet, D., Burki, G., Crowe, R.A.* **225**, 445

Particle acceleration at modified shock fronts. II. The problem of injection

*Kirk, J.G., Schneider, P.* **225**, 559

Time-dependent corona models: coronae with accretion

*Korevaar, P.* **226**, 209

### Site testing

Site testing for an optical observatory in Turkey

*Aslan, Z., Aydın, C., Tunca, Z., Demircan, O., Derman, E., Gölbaşı, O., Marşoğlu, A.* **208**, 385

Comparison of optical measurements of seeing and calculations based on radiosonde data

*Hecquet, J., Klaus, V.* **225**, 585

**Solar neighbourhood**; see Galaxy (the): solar neighbourhood



**Solar system: general**

Fundamental frequencies and small divisors in the orbits of the outer planets

*Nobili, A.M., Milani, A., Carpino, M.* **210**, 313

Minimum planetary size for forming outer Jovian-type planets: stability of an isothermal atmosphere surrounding a protoplanet

*Sasaki, S.* **215**, 177

The very-high-eccentricity asymmetric expansion of the disturbing function near resonances of any order

*Ferraz-Mello, S., Sato, M.* **225**, 541

**Solar wind**; see Interplanetary medium

**Space vehicles and instruments**

Solar wind control of Jupiter's hectometric radio emission

*Barrow, C.H., Desch, M.D.* **213**, 495

Electric antennae in the outer heliosphere: the importance of being stable

*Meyer-Vernet, N.* **224**, L5

**Spectrophotometry**

Fabry-Perot observations of [FeX] and [FeXIV] in the Cygnus Loop

*Ballet, J., Caplan, J., Rothenflug, R., Dubreuil, D., Soutoul, A.* **211**, 217

Emission line variation in the Seyfert galaxy Fairall 9 and the presence of broad [OIII] emission

*Stirpe, G.M., van Groningen, E., de Bruyn, A.G.* **211**, 310

Magnitudes of central stars of southern planetary nebulae

*Tylenda, R., Acker, A., Gleizes, F., Stenholm, B.* **213**, 520; **77**, 39

A photometric study of F-type stars of high galactic latitude

*Arellano Ferro, A., Giridhar, S., Chavez, M., Parrao, L.* **214**, 123

Infrared spectroscopy of supernova remnants

*Oliva, E., Moorwood, A.F.M., Danziger, I.J.* **214**, 307

Relations involving the spherical albedo and other photometric quantities of planets with thick atmospheres

*Hovenier, J.W., Hage, J.I.* **214**, 391

Recent spectral variation of the peculiar nova-like object PU Vulpeculae

*Iijima, T.* **215**, 57

High resolution solar bidimensional spectroscopy with a Universal Birefringent Filter in tandem with a Fabry-Perot interferometer

*Bonaccini, D., Cavallini, F., Ceppatelli, G., Righini, A.* **217**, 368

Spectrophotometry of faint Wolf-Rayet stars

*Lundström, I., Stenholm, B.* **218**, 199

EXO 032957-2606.9: a new long-period probable AM Herculis binary

*Beuermann, K., Thomas, H.C., Giommi, P., Tagliaferri, G., Schwabe, A.D.* **219**, L7

Spectral energy distributions of Be stars. III. Envelope models derived from new measurements for 17 stars

*Dachs, J., Poetzel, R., Kaiser, D.* **219**, 365; **78**, 487

Stellar integrated fluxes in the wavelength range 380 nm–900 nm derived from Johnson 13-colour photometry

*Petford, A.D., Blackwell, D.E.* **219**, 366; **78**, 511

Intermediate resolution spectra of quasars with  $z > 2$

*Ulrich, M.-H.* **220**, 71

Absolute fluxes for Supernova 1987 A. II. Days 51 to 157

*Hanuschik, R.W., Thimm, G., Seidensticker, K.J.* **220**, 153

IUE-ULDA/USSP: the on-line resolution spectral data archive of the International Ultraviolet Explorer

*Wamsteker, W., Driessen, C., Munoz, J.R., Hassall, B.J.M., Pasian, F., Barylak, M., Russo, G., Egret, D., Murray, J., Talavera, A., Heck, A.* **220**, 341; **79**, 1

Spectral energy distributions of Be stars. II. Determination of Be star parameters by comparison between measured and model spectra

*Kaiser, D.* **222**, 187

Derivation of photographic characteristic curves with a birefringent calibration device

*Griffin, R. & R.* **222**, 358

Spectrophotometry of southern planetary nebulae. I. Plasma diagnostics

*Acker, A., Köppen, J., Stenholm, B., Jasiewicz, G.* **224**, 363; **80**, 309

Infrared photometry and spectrophotometry of SN 1987 A. I. March to October 1987 observations

*Bouchet, P., Moneti, A., Slezak, E., Le Bertre, T., Manfroid, J.* **224**, 367; **80**, 379

A catalog of stellar spectrophotometry

*Adelman, S.J., Pyper, D.M., Shore, S.N., White, R.E., Warren, Jr., W.H.* **226**, 418; **81**, 221

Near infrared spectra of galactic and Magellanic Wolf-Rayet stars

*Vreux, J.M., Dennefeld, M., Andrillat, Y., Rochowicz, K.* **226**, 421; **81**, 353

**Spectroscopy**

Studies of symbiotic stars. I. Location of the UV emitting regions in 6 S-type systems monitored by the IUE satellite

*Munari, U.* **208**, 63

Rotational modulation of hydrogen Lyman  $\alpha$  flux from 44 Bootis

*Vilhu, O., Neff, J.E., Rahunen, T.* **208**, 201

Photometric and spectroscopic study of three candidate Herbig Ae/Be stars: HD 37411, HD 100546 and HD 104237

*Hu, J.Y., Thé, P.S., de Winter, D.* **208**, 213

Oscillations of the Sun's chromosphere. V. Importance of network dynamics for chromospheric heating

*von Uexküll, M., Kneer, F., Malherbe, J.M., Mein, P.* **208**, 290

Extended optical spectroscopy of the massive companion of 4U 1907+09

*van Kerkwijk, M.H., van Oijen, J.G.J., van den Heuvel, E.P.J.* **209**, 173

Chemical evolution of the Magellanic Clouds. I. Metal abundance in three young supergiants of the Small Cloud

*Spite, F., Spite, M., François, P.* **210**, 25

Optical spectroscopy and near-infrared mapping of S106

*Riera, A., Mampaso, A., Phillips, J.P., Vilchez, J.M.* **210**, 351

Long- and short-term variability of the T Tauri Star RY Lupi

*Gahm, G.F., Fischerström, C., Liseau, R., Lindroos, K.P.* **211**, 115

Broad emission line profiles in Seyfert-1 galaxies: [OIII]-wings from a transition zone

*van Groningen, E., de Bruyn, A.G.* **211**, 293

A search for electron-scattered wings in H $\alpha$  in Seyfert-1 galaxies

*van Groningen, E., van Weeren, N.* **211**, 318

In search of real solar twins. II

*Cayrel de Strobel, G., Bentolila, C.* **211**, 324

- PG 1550+131: a short periodic precataclysmic binary with very deep eclipses  
*Haefner, R.* **213**, L15
- The implications of image scrambling and focal ratio degradation in fibre optics on the design of astronomical instrumentation  
*Clayton, C.A.* **213**, 502
- Photographic and spectroscopic observations of three type Ia supernovae: 1982W, 1983R, and 1983U  
*Barbon, R., Ciatti, F., Iijima, T., Rosino, L.* **214**, 131
- Carbon abundance in the primaries of six Algol-type stars  
*Cugier, H.* **214**, 168
- Long-term and mid-term spectroscopic variations of the Be-shell star HD 184279 (V 1294 Aquilae). II. Towards a model  
*Ballereau, D., Chauville, J.* **214**, 285
- High resolution spectroscopy of the planetary nebula Hubble 12  
*Miranda, L.F., Solf, J.* **214**, 353
- Further observations of stars associated with the Sharpless H II region Sh 2-252, and of the Herbig A0e star Sh 2-252 b  
*Chavarría-K., C., Leitherer, C., de Lara, E., Sánchez, O., Zickgraf, F.-J.* **215**, 51
- Arp 118, an interacting system with extreme velocity gradients  
*Hipplein, H.H.* **216**, 11
- Laboratory microwave spectroscopy of the  $C_3N$  radical in the vibrationally excited state  $v_3$   
*Mikami, H., Yamamoto, S., Saito, S., Guélin, M.* **217**, L5
- A spectroscopic survey of red dwarf flare stars  
*Pettersen, B.R., Hawley, S.L.* **217**, 187
- The absolute H $\beta$  fluxes for southern planetary nebulae  
*Acker, A., Stenholm, B., Tylanda, R.* **217**, 394; **77**, 487
- Spectroscopic identification of white dwarfs in galactic clusters. V. NGC 3532  
*Reimers, D., Koester, D.* **218**, 118
- Studies of late-type binaries. III. A spectroscopic study of V 566 Ophiuchi  
*Hill, G., Fisher, W.A., Holmgren, D.* **218**, 152
- Spectroscopy of poorly known northern dwarf novae. Part I  
*Bruch, A.* **218**, 340; **78**, 145
- The surface gravities of Ap stars: spectroscopic estimates from H $\beta$  profiles and comparison with photometry  
*North, P., Kroll, R.* **218**, 343; **78**, 325
- A spectroscopic study of the dwarf nova CN Orionis  
*Barrera, L.H., Vogt, N.* **220**, 99
- The flare activity of the red dwarf binary Gliese 277 AB  
*Hawley, S.L., Panov, K.P., Pettersen, B.R., Sundland, S.R.* **220**, 218
- Optical and infrared observations of the H II region S 201  
*Mampaso, A., Phillips, J.P., Vilchez, J.M., Pizmiş, P., Riera, A.* **220**, 235
- Oscillator strength measurements in the vacuum-ultraviolet. IV. Weak lines of neutral carbon  
*Goldbach, C., Martin, M., Nollez, G.* **221**, 155
- A Bayesian classification of the IRAS LRS Atlas  
*Goebel, J., Volk, K., Walker, H., Gerbault, F., Cheeseman, P., Self, M., Stutz, J., Taylor, W.* **222**, L5
- Chemical evolution of the Magellanic Clouds. III. Oxygen and carbon abundances in a few F supergiants of the Small Cloud  
*Spite, M., Barbuy, B., Spite, F.* **222**, 35
- Wavelengths, oscillator strengths and transition probabilities of the  $H_2$  molecule for Lyman and Werner systems  
*Abgrall, H., Roueff, E.* **223**, 378; **79**, 313
- Erratum: Spectroscopy of poorly known northern dwarf novae. Part I  
*Bruch, A.* **223**, 380; **79**, 451
- Optical spectroscopy of 1 Jy BL Lacertae objects and flat spectrum radio sources  
*Stickel, M., Fried, J.W., Kühr, H.* **223**, 383; **80**, 103
- Peculiar and normal early-type stars in the galactic halo  
*Conlon, E.S., Brown, P.J.F., Dufton, P.L., Keenan, F.P.* **224**, 65
- Heavy elements in the 2000–3000 Å range of four Ap stars  
*Faraggiana, R.* **224**, 162
- Solar feature correlation tracker for ground-based telescopes  
*von der Lühe, O., Widener, A.L., Rimmele, Th., Spence, G., Dunn, R.B., Wiborg, P.* **224**, 351
- Chromospheres of late-type active and quiescent dwarfs. I. An atlas of high resolution Ca II H profiles  
*Rebolo, R., García-López, R., Beckmann, J.E., Vladilo, G., Fering, B.H., Crivellari, L.* **224**, 362; **80**, 135
- Chemical abundances in early B-type stars. I. Sample and metal line equivalent widths  
*Kilian, J., Nissen, P.E.* **224**, 364; **80**, 255
- Photon-counting imaging with a GaAs photocathode: evaluation of the Red-RANICON for astronomical imaging  
*Clampin, M., Paresce, F.* **225**, 578
- Equatorial cloud structure of Jupiter derived from high resolution spectroscopy in the  $\lambda\lambda$  6300–6825 Å region  
*Molina, A., Moreno, F., López-Moreno, J.J.* **226**, 311
- Spiral structure:** see Galaxy (the): kinematics and dynamics of; Galaxy (the): structure of; Galaxies: kinematics and dynamics of; Galaxies: spiral; Galaxies: structure of
- Stars: abundances**
- Abundance of manganese in metal-poor stars  
*Gratton, R.G.* **208**, 171
- The chemical composition of the extreme halo stars. I. Blue spectra of 20 dwarfs  
*Magain, P.* **209**, 211
- Non-LTE line formation in early B and late O stars. IV. Singly ionized nitrogen  
*Becker, S.R., Butler, K.* **209**, 244
- Explosive nucleosynthesis in supernova 1978 A  
*Hashimoto, M., Nomoto, K., Shigeyama, T.* **210**, L5
- Chemical evolution of the Magellanic Clouds. I. Metal abundance in three young supergiants of the Small Cloud  
*Spite, F., Spite, M., François, P.* **210**, 25
- Molecular emission lines from the envelopes of evolved stars  
*Sopka, R.J., Olofsson, H., Johansson, L.E.B., Nguyen-Q-Rieu, Zuckerman, B.* **210**, 78
- Standard models of Wolf-Rayet stars  
*Langer, N.* **210**, 93
- A spectroscopic analysis of the G 8 V star  $\tau$  Ceti  
*Arribas, S., Crivellari, L.* **210**, 211
- HCN emission and nitrogen-bearing molecules in oxygen-rich circumstellar envelopes  
*Nercessian, E., Guilloteau, S., Omont, A., Benayoun, J.J.* **210**, 225
- The presence of carbon in DZ star atmospheres  
*Weidemann, V., Koester, D.* **210**, 311
- Metal abundances in metal-poor globular clusters  
*Gratton, R.G., Ortolani, S.* **211**, 41
- Strömgren photometry of late-type supergiants in the Small Magellanic Cloud  
*Richtler, T.* **211**, 199
- In search of real solar twins. II  
*Cayrel de Strobel, G., Bentolila, C.* **211**, 324

- Multiplets in multi-level non-LTE radiative transfer  
*Takeda, Y.* **211**, 383
- The strength of NIII-CIII complex emission in low-mass X-ray binaries as a possible indicator of metallicity  
*Motch, C., Pakull, M.W.* **214**, L1
- Carbon abundance in the primaries of six Algol-type stars  
*Cugier, H.* **214**, 168
- Oxygen in old and thick disk stars  
*Barbuy, B., Erdelyi-Mendes, M.* **214**, 239
- An abundance analysis of the Hyades giant  $\gamma$  Tauri: an exercise in caution  
*Griffin, R.E.M., Holweger, H.* **214**, 249
- Excitation of HCN hyperfine lines in circumstellar envelopes: red-shift and molecular abundance  
*Truong-Bach, Nguyen-Q-Rieu* **214**, 267
- HD 39853: a high velocity K 5 III star with an exceptionally large Li content  
*Gratton, R.G., D'Antona, F.* **215**, 66
- uvby $\beta$*  photometry of peculiar B and A stars, discovered at Abastumani  
*Alania, I.F., Abuladze, O.P., West, R.M.* **215**, 411; **77**, 333
- A comparative study of Na I and Ca II infrared lines in stars, star clusters and galaxy nuclei: an alternative to the dwarf-enriched population  
*Alloin, D., Bica, E.* **217**, 57
- Erratum:* Walraven VBLUW photometry in basal halo fields. I. Photometric data for Selected Areas SA141 (South Galactic Pole), SA94 and SA107  
*Pel, J.W., Trefzger, C.F., Blaauw, A.* **217**, 394; **77**, 513
- Strong lithium in the very nearby K-dwarf HD 17925  
*Cayrel de Strobel, G., Cayrel, R.* **218**, L9
- A survey of F-type stars  
*Jaschek, M., Andriant, Y., Jaschek, C.* **218**, 180
- HR 107 – an F-type mild barium dwarf star  
*Tomkin, J., Lambert, D.L., Edvardsson, B., Gustafsson, B., Nissen, P.E.* **219**, L15
- Aa-photometry of  $\lambda$  Bootis stars  
*Maitzen, H.M., Pavlovski, K.* **219**, 253
- Detection of Lyman  $\alpha$  in the spectrum of a white dwarf with helium atmosphere  
*Koester, D., Weidemann, V.* **219**, 276
- Photometric metal abundances of high-luminosity red stars in young and intermediate-age open clusters  
*Clariá, J.J., Lapasset, E., Minniti, D.* **219**, 363; **78**, 363
- Am stars of the Hyades cluster: temperatures, lithium, and the heavier elements, Al, Si, and Fe  
*Burkhart, C., Coupry, M.F.* **220**, 197
- uvby $\beta$*  photometry of high-velocity and metal-poor stars. II. Intrinsic color and metallicity calibrations  
*Schuster, W.J., Nissen, P.E.* **221**, 65
- Proton mixing in He-rich layers: the  $^{13}\text{C}(\alpha, n)^{16}\text{O}$  neutron source and associated nucleosynthesis  
*Jorissen, A., Arnould, M.* **221**, 161
- Chemical evolution of the Magellanic Clouds. III. Oxygen and carbon abundances in a few F supergiants of the Small Cloud  
*Spite, M., Barbuy, B., Spite, F.* **222**, 35
- uvby $\beta$*  photometry of high-velocity and metal-poor stars. III. Metallicities and ages of the halo stars  
*Schuster, W.J., Nissen, P.E.* **222**, 69
- Non-LTE analysis of extremely helium-rich stars. I. The hot sdO stars LSE 153, 259 and 263  
*Husfeld, D., Butler, K., Heber, U., Drilling, J.S.* **222**, 150
- HD 145206: the first semibarium star with a main-sequence close companion?  
*Boffin, H.M.J., Jorissen, A.* **224**, L31
- Peculiar and normal early-type stars in the galactic halo  
*Conlon, E.S., Brown, P.J.F., Dufton, P.L., Keenan, F.P.* **224**, 65
- Heavy elements in the 2000–3000 Å range of four Ap stars  
*Faraggiana, R.* **224**, 162
- Behaviour of the O I triplet at  $\lambda$  7773. III. Am stars  
*van 't Veer-Menneret, C., Faraggiana, R., Gerbaldi, M., Castelli, F., Burkhart, C., Floquet, M.* **224**, 171
- Chemical abundances in early B-type stars. I. Sample and metal line equivalent widths  
*Kilian, J., Nissen, P.E.* **224**, 364; **80**, 255
- Abundance anomalies in main sequence A stars. I. Iron and titanium  
*Lemke, M.* **225**, 125
- Chemical evolution in the Magellanic Clouds. IV. Metal abundance of a star in the young globular cluster NGC 1818 in the Large Magellanic Cloud  
*Richtler, T., Spite, M., Spite, F.* **225**, 351
- A thorough spectroscopic study of the very nearby triple system: 36 Ophiuchi  
*Cayrel de Strobel, G., Perrin, M.-N., Cayrel, R., Lebreton, Y.* **225**, 369
- Quantitative spectroscopy of O-stars in the Magellanic Clouds. I. The young open cluster NGC 346 in the SMC  
*Kudritzki, R.P., Cabanne, M.L., Husfeld, D., Niemela, V.S., Groth, H.G., Puls, J., Herrero, A.* **226**, 235
- Behaviour of O I triplet  $\lambda$  7773. II. Ap stars  
*Gerbaldi, M., Floquet, M., Faraggiana, R., van 't Veer-Menneret, C.* **226**, 415; **81**, 127
- Photometry and spectroscopy of the open cluster NGC 2112  
*Richtler, T., Kaluzny, J.* **226**, 418; **81**, 225
- Stars: activity of**
- Activity in late-type dwarfs. III. Chromospheric and transition region line fluxes for two dM stars  
*Byrne, P.B., Doyle, J.G.* **208**, 159
- Rotational modulation of hydrogen Lyman  $\alpha$  flux from 44  $\lambda$  Bootis  
*Vilhu, O., Neff, J.E., Rahunen, T.* **208**, 201
- Optical flares from the dwarf M star V 577 Mon (Gliese 234 AB = Ross 614)  
*Doyle, J.G., van den Oord, G.H.J., Butler, C.J.* **208**, 208
- Chromospheric lines in red dwarf flare stars. III  
*Pettersen, B.R.* **209**, 279
- Excess calcium emission flux and the Rossby number  
*Stepień, K.* **210**, 273
- Quiescent and flaring radio emission from the flare stars AD Leonis, EQ Pegasi, UV Ceti, Wolf 630, YY Geminorum and YZ Canis Minoris  
*Jackson, P.D., Kundu, M.R., White, S.M.* **210**, 284
- Investigation of micro-flaring and secular and quasi-periodic variations in dMe flare stars. I. Suspected ultra-short "waves" in the dM2-3e star V1285 Aquilae  
*Andrews, A.D.* **210**, 303
- In search of real solar twins. II  
*Cayrel de Strobel, G., Bentolila, C.* **211**, 324
- A comparison of solar and stellar ultraviolet spectra obtained with SKYLAB and IUE  
*Cappelli, A., Cerruti-Sola, M., Cheng, C.C., Pallavicini, R.* **213**, 226

- The X-ray flare and the quiescent emission from Algol as detected by EXOSAT  
*van den Oord, G.H.J., Mewe, R.* **213**, 245
- Investigation of micro-flaring and secular and quasi-periodic variations in the dMe flare stars. II. "Time signatures" of micro-variability in V 1285 Aquilae, V 645 Centauri, V 1054 Ophiuchi and AU Microscopii  
*Andrews, A.D.* **214**, 220
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XII. Near-to-simultaneous high resolution UV and optical observations of II Pegasi during July 1984  
*Byrne, P.B., Panagi, P., Doyle, J.G., Englebrecht, C.A., McMahan, R., Marang, F., Wegner, G.* **214**, 227
- An estimate of the total chromospheric, transition region and coronal radiative losses in late-type stars  
*Doyle, J.G.* **214**, 258
- Stellar photometric stability. I. The open clusters Melotte 105, NGC 2660 and NGC 4755  
*Frandsen, S., Dreyer, P., Kjeldsen, H.* **215**, 287
- X-ray emission from acoustically heated coronae  
*Stepień, K., Ulmschneider, P.* **216**, 139
- VLA detection of radio emission from a dwarf nova  
*Benz, A.O., Güdel, M.* **218**, 137
- X-ray and optical observations of LDS 587  
*Pasquini, L., Schmitt, J.H.M.M., Harnden, F.R., Jr., Tozzi, G.P., Krautter, J.* **218**, 187
- Long-lived active longitudes on the spotted RS CVn star  $\sigma$  Geminorum  
*Olah, K., Panov, K.P., Pettersen, B.R., Valtaoja, E., Valtaoja, L.* **218**, 192
- The variable Herbig Ae star HR 5999. VIII. Spectroscopic observations 1975–1985 and correlations with simultaneous photometry  
*Tjin A Djie, H.R.E., Thé, P.S., Andersen, J., Nordström, B., Finkenzeller, U., Jankovics, I.* **218**, 338; **78**, 1
- The generation of MHD waves by forced turbulence in a weakly magnetized fluid  
*Rosner, R., Musielak, Z.E.* **219**, L27
- Magnetic structure in cool stars. XVI. Emissions from the outer atmospheres of M-type dwarfs  
*Rutten, R.G.M., Schrijver, C.J., Zwaan, C., Duncan, D.K., Mewe, R.* **219**, 239
- IUE observations of the M dwarfs CM Draconis and Rossiter 137B: magnetic activity at saturated levels  
*Vilhu, O., Ambruster, C.W., Neff, J.E., Linsky, J.L., Brandenburg, A., Ilyin, I.V., Shakhovskaya, N.I.* **222**, 179
- Towards a self-consistent description of accretion columns. IV. Iterative scattering solution of radiative transfer and effects of bulk motion  
*Maile, T., Bock, U., Herold, H., Rebetzky, A., Ruder, H., Ventura, J., Wolf, K.* **223**, 251
- Ultraviolet flares on II Pegasi  
*Doyle, J.G., Byrne, P.B., van den Oord, G.H.J.* **224**, 153
- Flux-flux relation: MgII h and k versus X-rays in dwarf M and K stars  
*Mathioudakis, M., Doyle, J.G.* **224**, 179
- Chromospheres of late-type active and quiescent dwarfs. I. An atlas of high resolution Ca II H profiles  
*Rebolo, R., García-López, R., Beckmann, J.E., Vladilo, G., Foing, B.H., Crivellari, L.* **224**, 362; **80**, 135
- Chromospheres of late-type active and quiescent dwarfs. II. An activity index derived from profiles of the Ca II  $\lambda$  8498 Å and  $\lambda$  8542 Å triplet lines  
*Foing, B.H., Crivellari, L., Vladilo, G., Rebolo, R., Beckmann, J.E.* **224**, 362; **80**, 189
- The photometric periods of the intermediate polar EX Hydrae  
*Siegel, N., Reinsch, K., Beuermann, K., van der Woerd, H., Wolff, E.* **225**, 97
- Zeeman-Doppler imaging of active stars. II. Numerical simulation and first observational results  
*Donati, J.-F., Semel, M., Praderie, F.* **225**, 467
- Stars: atmospheres of**
- Studies of symbiotic stars. I. Location of the UV emitting regions in 6 S-type systems monitored by the IUE satellite  
*Munari, U.* **208**, 63
- Rotational modulation of hydrogen Lyman  $\alpha$  flux from 44 Bootis  
*Vilhu, O., Neff, J.E., Rahunen, T.* **208**, 201
- Non-LTE line formation in early B and late O stars. IV. Singly ionized nitrogen  
*Becker, S.R., Butler, K.* **209**, 244
- Rapid line profile-variability of the A-type shell- and possible pre-main sequence star HD 163296  
*Baade, D., Stahl, O.* **209**, 268
- Time-dependent effects of acoustic wave heating and molecular cooling in the outer atmosphere of Arcturus  
*Cuntz, M., Muchmore, D.* **209**, 305
- Spectral analysis of 30 Wolf-Rayet stars  
*Schmutz, W., Hamann, W.-R., Wessolowski, U.* **210**, 236
- The first decade of envelope formation of 59 Cygni in the far UV and optical regions. II  
*Doazan, V., Barylak, M., Rusconi, L., Sedmak, G., Thomas, R.N., Bourdonneau, B.* **210**, 249
- Theoretical models for the continuum and colors of SN 1979C and SN 1980K  
*Hauschildt, P.H., Shaviv, G., Wehrse, R.* **210**, 262
- Phase variations of 88 Herculis: Do the UV observations confirm a connection between these variations and the changes of the photospheric parameters of the underlying star?  
*Zorec, J., Höflich, P., Divan, L.* **210**, 279
- The presence of carbon in DZ star atmospheres  
*Weidemann, V., Koester, D.* **210**, 311
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. X. The 1981 October 3 flare on V711 Tauri (= HR 1099)  
*Linsky, J.L., Neff, J.E., Brown, A., Gross, B.D., Simon, T., Andrews, A.D., Rodonò, M., Feldman, P.A.* **211**, 173
- In search of real solar twins. II  
*Cayrel de Strobel, G., Bentolila, C.* **211**, 324
- Multiplets in multi-level non-LTE radiative transfer  
*Takeda, Y.* **211**, 383
- The ultra-violet spectrum of the peculiar early-type supergiant, HD 157038  
*Dufton, P.L., Lennon, D.J.* **211**, 397
- The effects of photospheric extension upon the spectra of M-type Mira variables  
*Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.* **213**, 209
- Absolute flux calibration of the H and K lines of Ca II: chromospheric radiative losses in F and G-type stars  
*Pasquini, L., Pallavicini, R., Dravins, D.* **213**, 261



- Colors of extended static model photospheres of M giants  
*Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.* **213**, 520; 77, 1
- An atlas of calculated continuum energy distributions for supernovae of type II  
*Hauschildt, P.H., Shaviv, G., Wehrse, R.* **213**, 522; 77, 115
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XII. Near-to-simultaneous high resolution UV and optical observations of II Pegasi during July 1984  
*Byrne, P.B., Panagi, P., Doyle, J.G., Englebrecht, C.A., McMahan, R., Marang, F., Wegner, G.* **214**, 227
- Oxygen in old and thick disk stars  
*Barbuy, B., Erdelyi-Mendes, M.* **214**, 239
- An abundance analysis of the Hyades giant  $\gamma$  Tauri: an exercise in caution  
*Griffin, R.E.M., Holweber, H.* **214**, 249
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XI. Ultraviolet spectral images of AR Lacertae in September 1985  
*Neff, J.E., Walter, F.M., Rodonò, M., Linsky, J.L.* **215**, 79
- The region of formation of the ultraviolet high temperature resonance lines in the eclipsing binary  $\beta$  Persei (Algol)  
*Brandt, E., Garcia, L.G., Kondo, Y., Sahade, J.* **215**, 331
- Mass loss rate and atmospheric turbulence of the B2 hypergiant HD 80077  
*Carpay, J., de Jager, C., Nieuwenhuijzen, H., Moffat, A.* **216**, 143
- Element identifications in IUE spectra of chemically peculiar stars: the Pt-Au-Hg sequence  
*Fuhrmann, K.* **217**, 391; 77, 345
- Analytical expressions for the Rosseland-mean opacity and electron scattering in stellar atmospheres  
*Burger, P., Lamers, H.J.G.L.M.* **218**, 161
- Observations on the variability of linear polarization in late-type dwarf stars  
*Huovelin, J., Linnaluoto, S., Tuominen, I., Virtanen, H.* **218**, 340; 78, 129
- The surface gravities of Ap stars: spectroscopic estimates from H $\beta$  profiles and comparison with photometry  
*North, P., Kroll, R.* **218**, 343; 78, 325
- Detection of Lyman  $\alpha$  in the spectrum of a white dwarf with helium atmosphere  
*Koester, D., Weidemann, V.* **219**, 276
- The magnetic field and rotation period of the Ap star HD 4778  
*Bohlender, D.A.* **220**, 215
- Non-LTE analysis of extremely helium-rich stars. I. The hot sdO stars LSE 153, 259 and 263  
*Husfeld, D., Butler, K., Heber, U., Drilling, J.S.* **222**, 150
- The chromospheric emission from acoustically heated stellar atmospheres  
*Ulmschneider, P.* **222**, 171
- A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. II. Results and discussion  
*Baade, D.* **222**, 200
- Properties of the components of the UZ Librae system  
*Grewing, M., Bianchi, L., Garrido, R.* **223**, 172
- A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. I. Observations and measurements  
*Baade, D.* **223**, 380; 79, 423
- The UV silicon spectra of early B stars  
*Massa, D.* **224**, 131
- The IUE-UV spectrum of the CP2 star HR 465  
*Fuhrmann, K.* **224**, 367; 80, 399
- Towards a self-consistent description of accretion columns. II. Frequency-dependent radiation hydrodynamics  
*Rebetzky, A., Bock, U., Herold, H., Kraus, U., Maile, T., Nollet, H.-P., Ruder, H., Wolf, K.* **225**, 137
- Observations of the He I 10830 Å line in main-sequence O9-B9 stars and comparison with non-LTE predictions  
*Lennon, D.J., Dufton, P.L.* **225**, 439
- Zeeman-Doppler imaging of active stars. I. Basic principles  
*Semel, M.* **225**, 456
- Zeeman-Doppler imaging of active stars. II. Numerical simulation and first observational results  
*Donati, J.-F., Semel, M., Praderie, F.* **225**, 467
- Unified NLTE model atmospheres including spherical extension and stellar winds: method and first results  
*Gabler, R., Gabler, A., Kudritzki, R.P., Puls, J., Pauldrach, A.W.A.* **226**, 162
- Quantitative spectroscopy of O-stars in the Magellanic Clouds. I. The young open cluster NGC 346 in the SMC  
*Kudritzki, R.P., Cabanne, M.L., Husfeld, D., Niemela, V.S., Groth, H.G., Puls, J., Herrero, A.* **226**, 235
- Non-LTE model atmosphere calculations with approximate lambda operators: application of tridiagonal operators  
*Werner, K.* **226**, 265
- Behaviour of O I triplet  $\lambda$  7773. II. Ap stars  
*Gerbaldi, M., Floquet, M., Faraggiana, R., van't Veer-Meneret, C.* **226**, 415; 81, 127
- Stars: Be**
- The first decade of envelope formation of 59 Cygni in the far UV and optical regions. II  
*Doazan, V., Barylak, M., Rusconi, L., Sedmak, G., Thomas, R.N., Bourdonneau, B.* **210**, 249
- Infrared excess and H $\alpha$  luminosity in Be stars: a constant thickness disc model  
*Kastner, J.H., Mazzali, P.A.* **210**, 295
- Millimeter observations of the Be stars  $\psi$  Persei and  $\gamma$  Cassiopeiae  
*Waters, L.B.F.M., Boland, W., Taylor, A.R., van de Stadt, H., Lamers, H.J.G.L.M.* **213**, L19
- The galactic foreground reddening of SN 1987 A  
*Gochermann, J., Goudfrooij, P., Schmidt-Kaler, Th.* **213**, 333
- Long-term and mid-term spectroscopic variations of the Be-shell star HD 184279 (V 1294 Aquilae). II. Towards a model  
*Ballereau, D., Chauville, J.* **214**, 285
- Search for cool giant companions of the Be stars  $\zeta$  Tauri and KX Andromedae  
*Floquet, M., Hubert, A.M., Maillard, J.P., Chauville, J., Chatzichristou, H.* **214**, 295
- $\Delta\alpha$ -photometry of Be/shell stars  
*Pavlowski, K., Maitzen, H.M.* **217**, 391; 77, 351
- A search for time variability and its possible regularities in linear polarization of Be stars  
*Huang, L., Hsu, J.C., Guo, Z.H.* **219**, 364; 78, 431
- Spectral energy distributions of Be stars. III. Envelope models derived from new measurements for 17 stars  
*Dachs, J., Poetzel, R., Kaiser, D.* **219**, 365; 78, 487
- The formation and detectability of Be + white dwarf systems  
*Waters, L.B.F.M., Pols, O.R., Hogeveen, S.J., Coté, J., van den Heuvel, E.P.J.* **220**, L1
- Active phenomena in the pre-main sequence Herbig Ae star HD 163296  
*Catala, C., Simon, T., Praderie, F., Talavera, A., Thé, P.S., Tjin A Djie, H.R.E.* **221**, 273

## X-ray light curves of Be/X-ray binaries

*Waters, L.B.F.M., de Martino, D., Habets, G.M.H.J., Taylor, A.R.* **223**, 207

## Intensive photometry of southern Be variables. I. Winter objects

*Cuyper, J., Balona, L.A., Marang, F.* **226**, 418; **81**, 151

Stars:  $\beta$  CepHD 112481 and HD 145794, two  $\beta$  Cephei stars

*Waelkens, C., Heynderickx, D.* **208**, 129

Shock phenomena in  $\beta$  Cephei stars

*Crowe, R., Gillet, D.* **211**, 365

## Stars: binaries: close

The evolution of low-mass close binary systems with a compact component. II. Systems captured by angular momentum losses  
*Polyser, E.H.P., Savonije, G.J.* **208**, 52

Evolutionary status of W Ursae Majoris-type binaries: evolution into contact

*Sarna, M.J., Fedorova, A.V.* **208**, 111

Rotational modulation of hydrogen Lyman  $\alpha$  flux from 44 Bootis

*Vilhu, O., Neff, J.E., Rahunen, T.* **208**, 201

Optical flares from the dwarf M star V 577 Mon (Gliese 234 AB = Ross 614)

*Doyle, J.G., van den Oord, G.H.J., Butler, C.J.* **208**, 208

The new binary millisecond pulsar PSR 0021-72A: a laboratory for gravitational physics

*Wijers, R.A.M.J.* **209**, L1

The structure equations of contact binaries and the light curve paradox

*Kähler, H.* **209**, 67

The coalescence of white dwarfs and type I supernovae

*Mochkovitch, R., Livio, M.* **209**, 111

A combined radio and X-ray observation of Algol

*van den Oord, G.H.J., Kuipers, J., White, N.E., van der Hulst, J.M., Culhane, J.L.* **209**, 296

Optical studies of transient low-mass X-ray binaries in quiescence. I. Centaurus X-4: orbital period, light curve, spectrum and models for the system

*Chevalier, C., Ilovaisky, S.A., van Paradijs, J., Pedersen, H., van der Klis, M.* **210**, 114

Search for contact systems among EB-type binaries. I. TT Herculis

*Milano, L., Barone, F., Mancuso, S., Russo, G., Vittone, A.A.* **210**, 181

Asynchronous rotation in close binary systems with circular orbits

*Habets, G.M.H.J., Zwaan, C.* **211**, 56

Studies of late-type binaries. I. The physical parameters of 44 Bootis ABC

*Hill, G., Fisher, W.A., Holmgren, D.* **211**, 81

Synthetic optical and ultraviolet spectra of stationary accretion disks

*la Dous, C.* **211**, 131

Absolute dimensions of eclipsing binaries. XIV. UX Mensae

*Andersen, J., Clausen, J.V., Magain, P.* **211**, 346

Evolution of the surface abundance of carbon in mass-exchanging binaries

*De Greve, J.P., Cugier, H.* **211**, 356

PeV inverse Compton gamma rays from Cygnus X-3

*Schlickeiser, R.* **213**, L23

Tidal effects in rotating close binaries

*Rocca, A.* **213**, 114

An investigation of the micro variations of highly luminous OBA-type stars ( $\alpha$  Cygni variables). VIII. A study of the periodicities in the radial velocity and light variations of the nitrogen-rich supergiant HD 105056 (ON 9.7 Iae)

*van Genderen, A.M., Breukers, R.J.L.H., Houtekamer, P., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M.* **213**, 161

Absolute dimensions of eclipsing binaries. XV. EM Carinae

*Andersen, J., Clausen, J.V.* **213**, 183

Evolutionary models for detached close binaries: the systems V 539 Arae and QX Carinae

*De Greve, J.P.* **213**, 195

Carbon abundance in the primaries of six Algol-type stars

*Cugier, H.* **214**, 168

Evolution of close binary systems that undergo a dynamically stable late case C mass transfer

*Pastetter, L., Ritter, H.* **214**, 186

The X-ray ephemeris of Cygnus X-3

*van der Klis, M., Bonnet-Bidaud, J.M.* **214**, 203

Search for cool giant companions of the Be stars  $\zeta$  Tauri and KX Andromedae

*Floquet, M., Hubert, A.M., Maillard, J.P., Chauville, J., Chatzichristou, H.* **214**, 295

Recent spectral variation of the peculiar nova-like object PU Vulpeculae

*Iijima, T.* **215**, 57

Fundamental parameters for the W Serpentis stars. II. RX Casiopeiae

*Andersen, J., Pavlovski, K., Pirola, V.* **215**, 272

The region of formation of the ultraviolet high temperature resonance lines in the eclipsing binary  $\beta$  Persei (Algol)

*Brandi, E., Garcia, L.G., Kondo, Y., Sahade, J.* **215**, 331

Four-colour photometry of eclipsing binaries. XXXI. Light curves of EM Carinae

*Clausen, J.V., Giménez, A., Helt, B.E., Jensen, K.S., Vaz, L.P.R.* **215**, 410; **77**, 257

Transient low-mass X-ray binaries in quiescence. II. CCD photometry and spectroscopy of 4U 2129+47

*Chevalier, C., Ilovaisky, S.A., Motch, C., Pakull, M.W., Mouchet, M.* **217**, 108

Lightcurves of the Algol-variable U CrB in the UPS photometric system

*van Gent, R.H.* **217**, 393; **77**, 471

Studies of late-type binaries. II. The physical parameters of VW Cephei

*Hill, G.* **218**, 141

Studies of late-type binaries. III. A spectroscopic study of V 566 Ophiuchi

*Hill, G., Fisher, W.A., Holmgren, D.* **218**, 152

Theoretical aspects of two  $\alpha$ -distributions in accretion disks

*Adam, J., Störzer, H., Duschl, W.J.* **218**, 205

Spectroscopy of poorly known northern dwarf novae. Part I

*Bruch, A.* **218**, 340; **78**, 145

A common envelope model for SN 1987A

*Hillebrandt, W., Meyer, F.* **219**, L3

EXO 032957-2606.9: a new long-period probable AM Herculis binary

*Beuermann, K., Thomas, H.C., Giommi, P., Tagliaferri, G., Schwöpe, A.D.* **219**, L7

Detection of a brief outburst from the intermediate polar V 1223 Sgr

*van Amerongen, S., van Paradijs, J.* **219**, 195

- The H $\alpha$  profile of Algol  
*Gillet, D., Mouchet, M., North, P.* **219**, 219
- Cyclotron spectrum from a dipole magnetic field accretion column  
*Canalle, J.B.G., Opher, R.* **219**, 334
- The formation and detectability of Be+ white dwarf systems  
*Waters, L.B.F.M., Pols, O.R., Hogeveen, S.J., Coté, J., van den Heuvel, E.P.J.* **220**, L1
- Tidal evolution of close binary stars. I. Revisiting the theory of the equilibrium tide  
*Zahn, J.-P.* **220**, 112
- The angular momentum loss for late-type stars  
*van 't Veer, F., Maceroni, C.* **220**, 128
- Can we expect a freely precessing neutron star in Her X-1?  
*Bisnovatyi-Kogan, G.S., Mersov, G.A., Sheffer, E.K.* **221**, L7
- Constraints from the UV delay in dwarf nova outbursts  
*Meyer, F., Meyer-Hofmeister, E.* **221**, 36
- Solution of light curves with third light contribution: the eclipsing binaries LY Aurigae and AH Cephei reconsidered  
*Drechsel, H., Lorenz, R., Mayer, P.* **221**, 49
- X-ray absorption dips in low-mass X-ray binaries: an evidence for tidal feed back?  
*Pandey, U.S.* **221**, 62
- EXOSAT observations of five luminous globular cluster X-ray sources  
*Parmar, A.N., Stella, L., Giommi, P.* **222**, 96
- An infrared search for obscured globular clusters associated with X-ray sources  
*van Paradijs, J., Isaacman, R.* **222**, 129
- A polarimetric study of the magnetic cataclysmic binary BL Hy-dri  
*Schwöpe, A.D., Beuermann, K.* **222**, 132
- Radiation hydrodynamics of the boundary layer in accretion disks. II. Optically thick models  
*Kley, W.* **222**, 141
- IUE observations of the M dwarfs CM Draconis and Rossiter 137B: magnetic activity at saturated levels  
*Vilhu, O., Ambruster, C.W., Neff, J.E., Linsky, J.L., Brandenburg, A., Ilyin, I.V., Shakhovskaya, N.I.* **222**, 179
- Tidal evolution of close binary stars. II. Orbital circularization of late-type binaries  
*Zahn, J.-P., Bouchet, L.* **223**, 112
- The Kuwano-Honda's peculiar object (PU Vulpeculae) in 1983-1986  
*Belyakina, T.S., Bondar, N.I., Chochol, D., Chuvaev, K.K., Efimov, Y.S., Gershberg, R.E., Grygar, J., Hric, L., Krasnobabtsev, V.I., Piirola, V., Poutanen, M., Savanov, I.S., Huovelin, J., Tuominen, I., Shakhovskaya, N.I., Shakhovskoy, N.M., She-  
 navrin, V.I., Shcherbakov, A.G.* **223**, 119
- Properties of the components of the UZ Librae system  
*Grewing, M., Bianchi, L., Garrido, R.* **223**, 172
- One-pole and two-pole X-ray emission in the AM Herculis binary BL Hydri  
*Beuermann, K., Schwöpe, A.D.* **223**, 179
- One-pole and two-pole X-ray emission in the AM Herculis binary BL Hydri  
*Beuermann, K., Schwöpe, A.D.* **223**, 179
- X-ray light curves of Be/X-ray binaries  
*Waters, L.B.F.M., de Martino, D., Habets, G.M.H.J., Taylor, A.R.* **223**, 207
- Five-colour optical photometry of AE Aquarii  
*van Paradijs, J., Kraakman, H., van Amerongen, S.* **223**, 375; **79**, 205
- Simultaneous *UBVRI* photometry of Nova DQ Herculis (1934)  
*Schoembs, R., Rebhan, H.* **224**, 42
- Gravity-darkening for stars with a Roche lobe filling convective envelopes in close binary systems  
*Sarna, M.J.* **224**, 98
- The orbital period of the cataclysmic variable WX Ceti  
*van Paradijs, J., van der Klis, M., Pedersen, H.* **225**, L5
- The photometric periods of the intermediate polar EX Hydrae  
*Siegel, N., Reinsch, K., Beuermann, K., van der Woerd, H., Wolff, E.* **225**, 97
- Accretion disk models with a self-consistent viscosity parameter  $\alpha$  in convective zones  
*Duschl, W.J.* **225**, 105
- A study of the ultraviolet spectrum of VV Cephei  
*Hack, M., Engin, S., Yilmaz, N.* **225**, 143
- The turn-on of mass transfer in cataclysmic binaries  
*D'Antona, F., Mazzitelli, I., Ritter, H.* **225**, 391
- The number of evolved early-type close binaries in the Galaxy  
*Meurs, E.J.A., van den Heuvel, E.P.J.* **226**, 88
- X-ray spectroscopy of RS CVn stars with EXOSAT  
*Pasquini, L., Schmitt, J.H.M.M., Pallavicini, R.* **226**, 225
- IUE observations of variability in the WN6 star HD 192163  
*St-Louis, N., Smith, L.J., Stevens, I.R., Willis, A.J., Garmany, C.D., Conti, P.S.* **226**, 249
- The moment of inertia of main sequence stars  
*Claret, A., Giménez, A.* **226**, 415; **81**, 37
- Photometric analysis of the eclipsing binary RX Hydrae  
*Vyas, M.L., Abhyankar, K.D.* **226**, 415; **81**, 67
- Photometric study of the eclipsing binary RR Leporis  
*Vyas, M.L., Abhyankar, K.D.* **226**, 415; **81**, 81
- Four-colour photometry of eclipsing binaries. XXXII. Light curves of V 1031 Orionis  
*Clausen, J.V., Nordström, B., Andersen, J.* **226**, 418; **81**, 197
- Stars: binaries: general**
- Blue stragglers and the binary hypothesis  
*Manteiga, M., Pickles, A.J., Martinez Roger, C.* **210**, 66
- Quiescent and flaring radio emission from the flare stars AD Leonis, EQ Pegasi, UV Ceti, Wolf 630, YY Geminorum and YZ Canis Minoris  
*Jackson, P.D., Kundu, M.R., White, S.M.* **210**, 284
- Search for a 12.59 ms pulsar in Cygnus X-3  
*Fegan, D.J., Cawley, M.F., Gibbs, K., Lamb, R.C., Lewis, D.A., Porter, N.A., Reynolds, P.T., Smyth, G., Weekes, T.C.* **211**, L1
- PG 1550+131: a short periodic precataclysmic binary with very deep eclipses  
*Haefner, R.* **213**, L15
- Multiple close frequencies of the Delta Scuti star  $\theta^2$  Tauri. II. The second multisite campaign  
*Breger, M., Garrido, R., Huang Lin, Jiang Shi-yang, Guo Zi-he, Frueh, M., Paparo, M.* **214**, 209
- Orbital double stars with variable components (text in French)  
*Baize, P., Petit, M.* **217**, 394; **77**, 497
- VLA detection of radio emission from a dwarf nova  
*Benz, A.O., Güdel, M.* **218**, 137
- HR 107 - an F-type mild barium dwarf star  
*Tomkin, J., Lambert, D.L., Edvardsson, B., Gustafsson, B., Nissen, P.E.* **219**, L15
- Red giants in open clusters. II. Orbits of ten spectroscopic binaries in NGC 2360, 2437, 2447, 5822, 5823, and 6475  
*Mermilliod, J.-C., Mayor, M., Andersen, J., Nordström, B., Lindgren, H., Duquennoy, A.* **220**, 341; **79**, 11

The relation between orbital and spin periods in massive X-ray binaries

*Waters, L.B.F.M., van Kerkwijk, M.H.* **223**, 196

Planetary orbits in the elliptic restricted problem. II. The Sirius system

*Benest, D.* **223**, 361

An upper limit on the high-energy gamma-ray emission of Vela X-1

*Mattox, J.R., Ögelman, H., Kanbach, G.* **226**, 145

Stability of outer planetary orbits (P-types) in binaries

*Dvorak, R., Froeschlé, Ch., Froeschlé, Cl.* **226**, 335

#### Stars: binaries: spectroscopic

A study of ultraviolet spectra of  $\zeta$  Aurigae/VV Cephei systems. XI. 22 Vulpeculae: IUE observations of its extended chromosphere and wind with spatial resolution

*Schröder, K.-P., Reimers, D.* **208**, 223

Extended optical spectroscopy of the massive companion of 4U 1907+09

*van Kerkwijk, M.H., van Oijen, J.G.J., van den Heuvel, E.P.J.* **209**, 173

Chromospheric lines in red dwarf flare stars. III

*Pettersen, B.R.* **209**, 279

Search for contact systems among EB-type binaries. I. TT Herculis

*Milano, L., Barone, F., Mancuso, S., Russo, G., Vittone, A.A.* **210**, 181

Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. X. The 1981 October 3 flare on V711 Tauri (= HR 1099)

*Linsky, J.L., Neff, J.E., Brown, A., Gross, B.D., Simon, T., Andrews, A.D., Rodonò, M., Feldman, P.A.* **211**, 173

Absolute dimensions of eclipsing binaries. XIV. UX Mensae

*Andersen, J., Clausen, J.V., Magain, P.* **211**, 346

Time-resolved spectroscopy of the eclipsing dwarf nova OY Carinae

*Hessman, F.V., Koester, D., Schoembs, R., Barwig, H.* **213**, 167

Carbon abundance in the primaries of six Algol-type stars

*Cugier, H.* **214**, 168

Observations of modulation and phase displacement of the stellar wind in six red giant spectroscopic binaries

*Reimers, D., Schröder, K.-P.* **214**, 261

Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XI. Ultraviolet spectral images of AR Lacertae in September 1985

*Neff, J.E., Walter, F.M., Rodonò, M., Linsky, J.L.* **215**, 79

W Sagittarii: pulsation and orbit

*Babel, J., Burki, G., Mayor, M., Waelkens, C., Chmielewski, Y.* **216**, 125

Improved orbital parameters for the binary Cepheid T Monocerotis

*Gieren, W.P.* **216**, 135

Orbital elements for double stars of Population II. The double-line high-velocity system HD 113083

*Lindgren, H., Ardeberg, A., Zuiderwijk, E.* **218**, 111

Studies of late-type binaries. II. The physical parameters of VV Cephei

*Hill, G.* **218**, 141

Studies of late-type binaries. III. A spectroscopic study of V 566 Ophiuchi

*Hill, G., Fisher, W.A., Holmgren, D.* **218**, 152

The pre-main-sequence binary system AK Scorpii

*Andersen, J., Lindgren, H., Hazen, M.L., Mayor, M.* **219**, 142

The H $\alpha$  profile of Algol

*Gillet, D., Mouchet, M., North, P.* **219**, 219

Contribution to the study of F-G-K-M binaries. V. Orbital elements of the spectroscopic binary HD 189578

*Pédoussaut, A., Carquillat, J.M., Ginestet, N.* **219**, 364; **78**, 441

$\theta^1$  Orionis A: a pre-main sequence low  $q$  binary system?

*Bossi, M., Gaspari, A., Scardia, M., Tadini, M.* **222**, 117

The peculiar B[e] star MWC 623: a binary system with a Li-rich K star

*Zickgraf, F.-J., Stahl, O.* **223**, 165

Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XIII. IUE spectroscopy and photometry of II Pegasi during September 1986

*Doyle, J.G., Butler, C.J., Byrne, P.B., Rodonò, M., Swank, J., Fowles, W.* **223**, 219

HD 145206: the first semibarium star with a main-sequence close companion?

*Boffin, H.M.J., Jorissen, A.* **224**, L31

Ultraviolet flares on II Pegasi

*Doyle, J.G., Byrne, P.B., van den Oord, G.H.J.* **224**, 153

Spectroscopic variations of the V 444 Cyg system

*Acker, A., Prévot, M.-L., Prévot, L.* **226**, 137

Photometric analysis of the eclipsing binary RX Hydrae

*Vyas, M.L., Abhyankar, K.D.* **226**, 415; **81**, 67

Photometric study of the eclipsing binary RR Leporis

*Vyas, M.L., Abhyankar, K.D.* **226**, 415; **81**, 81

Four-colour photometry of eclipsing binaries. XXXII. Light curves of V 1031 Orionis

*Clausen, J.V., Nordström, B., Andersen, J.* **226**, 418; **81**, 197

#### Stars: binaries: symbiotic

Resumed spin-up in GX 1+4

*Greenhill, J.G., Giles, A.B., Sharma, D.P., Dieters, S., Sood, R.K., Thomas, J.A., Waldron, L., Manchanda, R.K., Carli, R., Hammer, P., Kendziorra, E., Stauber, R., Bazzano, A., Ubertini, P., La Padula, C.* **208**, L1

Studies of symbiotic stars. I. Location of the UV emitting regions in 6 S-type systems monitored by the IUE satellite

*Munari, U.* **208**, 63

Identification of the emission bands at  $\lambda\lambda$  6830, 7088

*Schmid, H.M.* **211**, L31

Z Andromedae and the symbiotic phenomenon

*Nussbaumer, H., Vogel, M.* **213**, 137

Photometry of AS 296 in outbursts: a puzzling color evolution

*Munari, U., Buson, L.M., Massone, G.* **214**, L5

Recent spectral variation of the peculiar nova-like object PU Vulpeculae

*Iijima, T.* **215**, 57

The spectral variation of polarization due to magnetic intensification

*Leroy, J.L.* **215**, 360

Eclipse cross-sections of cool components in double star systems

*Isliker, H., Nussbaumer, H., Vogel, M.* **219**, 271

The Kuwano-Honda's peculiar object (PU Vulpeculae) in 1983-1986

*Belyakina, T.S., Bondar, N.I., Chochol, D., Chuvaev, K.K., Efimov, Y.S., Gershberg, R.E., Grygar, J., Hric, L., Krasnobabstsev, V.I., Piirola, V., Poutanen, M., Savanov, I.S., Huvelin, J., Tuominen, I., Shakhovskaya, N.I., Shakhovskoy, N.M., Shevartdin, V.I., Shcherbakov, A.G.* **223**, 119



**Stars: binaries: visual**

The triple star Kpr 99

*Heintz, W.D.* **211**, 156

Measurements of visual double stars made at Nice with 50 cm refractor

*Le Beau, J.* **213**, 522; **77**, 125

The substellar masses of Wolf 424

*Heintz, W.D.* **217**, 145

Orbital double stars with variable components (text in French)

*Baize, P., Petit, M.* **217**, 394; **77**, 497

The birthrates of galactic low mass binary radio pulsars and their progenitor systems

*Coté, J., Pylyser, E.H.P.* **218**, 131

Studies of late-type binaries. II. The physical parameters of VW Cephei

*Hill, G.* **218**, 141

Orbital elements of twelve visual binary stars

*Baize, P.* **218**, 339; **78**, 125

Measurements of visual double stars made with the 152 cm telescope at Calar Alto

*Couteau, P., Docobo, J.A., Elipse, A., Ling, J.F.* **219**, 365; **78**, 483

Measurements of visual double stars made at Pic-du-Midi and Nice

*Couteau, P.* **223**, 379; **79**, 385

*uvby* photometry of wide visual double stars. III.

*Oblak, E.* **224**, 364; **80**, 249

Orbits of six visual double stars

*Couteau, P.* **224**, 367; **80**, 373

A photometric study of wide visual double stars with significant relative proper motion

*Sinachopoulos, D.* **226**, 415; **81**, 103

Orbital elements of eight interferometric binary stars

*Baize, P.* **226**, 421; **81**, 415

**Stars: blue stragglers**

Blue stragglers and the binary hypothesis

*Manteiga, M., Pickles, A.J., Martinez Roger, C.* **210**, 66

The homogeneous evolution of massive stars

*Beech, M., Mitalas, R.* **213**, 127

**Stars: bolometric correction**

Infrared bolometric corrections for AGB stars with circumstellar shells

*van der Veen, W.E.C.J., Breukers, R.J.L.H.* **213**, 133

Effects of stellar rotation on the Geneva photometric system

*Hauck, B., Slettebak, A.* **214**, 153

**Stars: carbon**

Molecular line spectra from circumstellar envelopes. II. The envelope of IRC+10216

*Schönberg, K.* **208**, 219

Outflow velocities from carbon stars

*Zuckerman, B., Dyck, H.M.* **209**, 119

Synthetic optical and ultraviolet spectra of stationary accretion disks

*la Dous, C.* **211**, 131

Long-term polarimetric behaviour of the carbon Mira R Leporis

*Raveendran, A.V., Kameswara Rao, N.* **215**, 63

Near-infrared observations and optical identifications of a few unassociated IRAS sources with dust shells

*Iyengar, K.V.K., Ghosh, S.K., Rengarajan, T.N., Verma, R.P., Joshi, S.C., Srivastava, R.K.* **221**, 250

Carbon stars with oxygen-rich circumstellar envelopes?

*Zuckerman, B., Maddalena, R.J.* **223**, L20

Carbon stars with oxygen-rich circumstellar envelopes!

*de Jong, T.* **223**, L23

A comparison between CO-, OH-, and IR-mass-loss rates of evolved stars

*van der Veen, W.E.C.J., Rutgers, M.* **226**, 183

**Stars: cataclysmic variables; see Stars: novae****Stars: Cepheids**

W Sagittarii: pulsation and orbit

*Babel, J., Burki, G., Mayor, M., Waelkens, C., Chmielewski, Y.* **216**, 125

Improved orbital parameters for the binary Cepheid T Monocerotis

*Gieren, W.P.* **216**, 135

The new long-period Cepheid G458 = HDE 270100 in the Large Magellanic Cloud

*van Genderen, A.M., Hadiyanto Nitihardjo, G.* **221**, 230

The Cepheid 1162 Aquilae

*Mavridis, L.N., Nikolov, N.S., Avgoloupis, S.I., Varvoglis, P.P.* **224**, 365; **80**, 279

Towards a reconciliation of Cepheid masses

*Gieren, W.P.* **225**, 381

Studies of Cepheid-type variability. VI. Two- and three-mode resonances in Cepheid models

*Petersen, J.O.* **226**, 151

Radial velocities of southern stars obtained with the photoelectric scanner Coravel. VIII. Radial velocity variations of eleven Cepheids in the Large and Small Magellanic Clouds

*Imbert, M., Andersen, J., Ardeberg, A., Duquenois, A., Lindgren, H., Maurice, E., Mayor, M., Mermilliod, J.C., Nordström, B., Prévot, L.* **226**, 421; **81**, 339

**Stars: chromospheres of**

Activity in late-type dwarfs. III. Chromospheric and transition region line fluxes for two dM stars

*Byrne, P.B., Doyle, J.G.* **208**, 159

High resolution IUE observations of the flare star AD Leonis: implications for the Mg II Wilson-Bappu effect

*Ambruster, C.W., Pettersen, B.R., Sundland, S.R.* **208**, 198

Rotational modulation of hydrogen Lyman  $\alpha$  flux from 44 Bootis

*Vilhu, O., Neff, J.E., Rahunen, T.* **208**, 201

A study of ultraviolet spectra of  $\zeta$  Aurigae/VV Cephei systems. XI. 22 Vulpeculae: IUE observations of its extended chromosphere and wind with spatial resolution

*Schröder, K.-P., Reimers, D.* **208**, 223

Chromospheric lines in red dwarf flare stars. III

*Pettersen, B.R.* **209**, 279

Time-dependent effects of acoustic wave heating and molecular cooling in the outer atmosphere of Arcturus

*Cuntz, M., Muchmore, D.* **209**, 305

Excess calcium emission flux and the Rossby number

*Stepień, K.* **210**, 273

- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. X. The 1981 October 3 flare on V711 Tauri (= HR 1099)  
*Linsky, J.L., Neff, J.E., Brown, A., Gross, B.D., Simon, T., Andrews, A.D., Rodonò, M., Feldman, P.A.* **211**, 173
- A comparison of solar and stellar ultraviolet spectra obtained with SKYLAB and IUE  
*Cappelli, A., Cerruti-Sola, M., Cheng, C.C., Pallavicini, R.* **213**, 226
- Absolute flux calibration of the H and K lines of Ca II: chromospheric radiative losses in F and G-type stars  
*Pasquini, L., Pallavicini, R., Dravins, D.* **213**, 261
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XII. Near-to-simultaneous high resolution UV and optical observations of II Pegasi during July 1984  
*Byrne, P.B., Panagi, P., Doyle, J.G., Englebrecht, C.A., McMahan, R., Marang, F., Wegner, G.* **214**, 227
- An estimate of the total chromospheric, transition region and coronal radiative losses in late-type stars  
*Doyle, J.G.* **214**, 258
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XI. Ultraviolet spectral images of AR Lacertae in September 1985  
*Neff, J.E., Walter, F.M., Rodonò, M., Linsky, J.L.* **215**, 79
- X-ray emission from acoustically heated coronae  
*Stepień, K., Ulmschneider, P.* **216**, 139
- A spectroscopic survey of red dwarf flare stars  
*Pettersen, B.R., Hawley, S.L.* **217**, 187
- H $\alpha$  versus X-ray luminosity in dwarf M stars  
*Doyle, J.G.* **218**, 195
- Magnetic structure in cool stars. XVI. Emissions from the outer atmospheres of M-type dwarfs  
*Rutten, R.G.M., Schrijver, C.J., Zwaan, C., Duncan, D.K., Mewe, R.* **219**, 239
- Active phenomena in the pre-main sequence Herbig Ae star HD163296  
*Catala, C., Simon, T., Praderie, F., Talavera, A., Thé, P.S., Tjin A Djie, H.R.E.* **221**, 273
- The chromospheric emission from acoustically heated stellar atmospheres  
*Ulmschneider, P.* **222**, 171
- IUE observations of the M dwarfs CM Draconis and Rossiter 137B: magnetic activity at saturated levels  
*Vilhu, O., Ambruster, C.W., Neff, J.E., Linsky, J.L., Brandenburg, A., Ilyin, I.V., Shakhovskaya, N.I.* **222**, 179
- Properties of the components of the UZ Librae system  
*Grewing, M., Bianchi, L., Garrido, R.* **223**, 172
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XIII. IUE spectroscopy and photometry of II Pegasi during September 1986  
*Doyle, J.G., Butler, C.J., Byrne, P.B., Rodonò, M., Swank, J., Fowles, W.* **223**, 219
- Activity in late-type stars. IV. The 1980 August 20 flare on Proxima Centauri revisited  
*Byrne, P.B., McKay, D.* **223**, 241
- Ultraviolet flares on II Pegasi  
*Doyle, J.G., Byrne, P.B., van den Oord, G.H.J.* **224**, 153
- Flux-flux relation: MgII h and k versus X-rays in dwarf M and K stars  
*Mathioudakis, M., Doyle, J.G.* **224**, 179
- Chromospheres of late-type active and quiescent dwarfs. I. An atlas of high resolution Ca II H profiles  
*Rebolo, R., Garcia-Lopez, R., Beckmann, J.E., Vladilo, G., Foing, B.H., Crivellari, L.* **224**, 362; **80**, 135
- Chromospheres of late-type active and quiescent dwarfs. II. An activity index derived from profiles of the Ca II  $\lambda$  8498 Å and  $\lambda$  8542 Å triplet lines  
*Foing, B.H., Crivellari, L., Vladilo, G., Rebolo, R., Beckmann, J.E.* **224**, 362; **80**, 189
- Variations in the chromospheric Ca II lines of  $\alpha$  Orionis  
*Toussaint, F., Reimers, D.* **226**, L17
- Stars: circumstellar matter**
- A multifrequency study of circumstellar envelopes of cool giants and supergiants  
*Heske, A.* **208**, 77
- Photometric and spectroscopic study of three candidate Herbig Ae/Be stars: HD 37411, HD 100546 and HD 104237  
*Hu, J.Y., Thé, P.S., de Winter, D.* **208**, 213
- Molecular line spectra from circumstellar envelopes. II. The envelope of IRC+10216  
*Schönberg, K.* **208**, 219
- A study of ultraviolet spectra of  $\zeta$  Aurigae/VV Cephei systems. XI. 22 Vulpeculae: IUE observations of its extended chromosphere and wind with spatial resolution  
*Schröder, K.-P., Reimers, D.* **208**, 223
- IRAS Low Resolution Spectrograph spectral class and M and S Miras  
*Vardya, M.S.* **209**, 165
- New aspects of the variability of the probable pre-main sequence star HR 5999  
*Baade, D., Stahl, O.* **209**, 255
- Molecular emission lines from the envelopes of evolved stars  
*Sopka, R.J., Olofsson, H., Johansson, L.E.B., Nguyen-Q-Rieu, Zuckerman, B.* **210**, 78
- The polarized dust envelope around the red supergiant  $\mu$  Cephei  
*Le Borgne, J.F., Mauron, N.* **210**, 198
- HCN emission and nitrogen-bearing molecules in oxygen-rich circumstellar envelopes  
*Nercessian, E., Guilloteau, S., Omont, A., Benayoun, J.J.* **210**, 225
- Infrared excess and H $\alpha$  luminosity in Be stars: a constant thickness disc model  
*Kastner, J.H., Mazzali, P.A.* **210**, 295
- The structure of the molecular gas in the young planetary nebula NGC 2346  
*Bachiller, R., Planesas, P., Martin-Pintado, J., Bujarrabal, V., Tafalla, M.* **210**, 366
- $v=3, J=1-0$  SiO maser emission from evolved stars  
*Alcolea, J., Bujarrabal, V., Gallego, J.D.* **211**, 187
- Circumstellar dust around HR 4049: a critical test for theories of interstellar dust  
*Waters, L.B.F.M., Lamers, H.J.G.L.M., Snow, T.P., Mathlener, E., Trams, N.R., van Hoof, P.A.M., Waelkens, C., Seab, C.G., Stanga, R.* **211**, 208
- OH properties of Mira stars  
*Sivagnanam, P., Le Squeren, A.M., Foy, F., Tran Minh, F.* **211**, 341
- Observations of modulation and phase displacement of the stellar wind in six red giant spectroscopic binaries  
*Reimers, D., Schröder, K.-P.* **214**, 261

- Excitation of HCN hyperfine lines in circumstellar envelopes: red-shift and molecular abundance  
*Truong-Bach, Nguyen-Q-Rieu* **214**, 267
- Polarization characteristics of galactic B[e] stars  
*Zickgraf, F.-J., Schulte-Ladbeck, R.E.* **214**, 274
- Long-term and mid-term spectroscopic variations of the Be-shell star HD 184279 (V 1294 Aquilae). II. Towards a model  
*Ballereau, D., Chauville, J.* **214**, 285
- Search for cool giant companions of the Be stars  $\zeta$  Tauri and KX Andromedae  
*Floquet, M., Hubert, A.M., Maillard, J.P., Chauville, J., Chatzichristou, H.* **214**, 295
- The circumstellar gas around  $\beta$  Pictoris. VIII. Evidence for a clumpy structure of the infalling gas  
*Lagrange-Henri, A.M., Beust, H., Ferlet, R., Vidal-Madjar, A.* **215**, L5
- A new circumstellar maser:  $^{30}\text{SiO}$   
*Barcia, A., Alcolea, J., Bujarrabal, V.* **215**, L9
- Long-term polarimetric behaviour of the carbon Mira R Leporis  
*Raveendran, A.V., Kameswara Rao, N.* **215**, 63
- Fundamental parameters for the W Serpentis stars. II. RX Casiopeiae  
*Andersen, J., Pavlovski, K., Pirola, V.* **215**, 272
- IRAS 17516-2525: an evolved star or a young stellar object?  
*van der Veen, W.E.C.J., Geballe, T.R., Habing, H.J., van Langevelde, H.J.* **216**, L1
- Laboratory microwave spectroscopy of the  $\text{C}_3\text{N}$  radical in the vibrationally excited state  $v_5$   
*Mikami, H., Yamamoto, S., Saito, S., Guélin, M.* **217**, L5
- Wave propagation in dusty cool stellar envelopes  
*Havnes, O., Hartquist, T.W., Pilipp, W.* **217**, L13
- Irregular structure of the envelope around the carbon-rich star TX Piscium  
*Heske, A., te Lintel Hekkert, P., Maloney, P.R.* **218**, L5
- Discovery of strong maser emission from HCN in IRC + 10216  
*Lucas, R., Cernicharo, J.* **218**, L20
- A study of M Mira variables based on IRAS LRS observations. I. Dust formation in the circumstellar shell  
*Onaka, T., de Jong, T., Willems, F.J.* **218**, 169
- Optical observations of the "frosty" Leo nebula (IRAS 09371 + 1212)  
*Mauron, N., Le Borgne, J.-F., Picquette, M.* **218**, 213
- The variable Herbig Ae star HR 5999. VIII. Spectroscopic observations 1975-1985 and correlations with simultaneous photometry  
*Tjin A Dje, H.R.E., Thé, P.S., Andersen, J., Nordström, B., Finkenzeller, U., Jankovics, I.* **218**, 338; **78**, 1
- The pre-main-sequence binary system AK Scorpii  
*Andersen, J., Lindgren, H., Hazen, M.L., Mayor, M.* **219**, 142
- An analysis of high resolution spectra of the B[e]-stars CPD-52°9243 and MWC 300  
*Winkler, H., Wolf, B.* **219**, 151
- CO and SiO thermal emission in evolved stars  
*Bujarrabal, V., Gómez-González, J., Planesas, P.* **219**, 256
- Radiation pressure on circumstellar grains. Opacity effects  
*Lefèvre, J.* **219**, 265
- Spectral energy distributions of Be stars. III. Envelope models derived from new measurements for 17 stars  
*Dachs, J., Poetzel, R., Kaiser, D.* **219**, 365; **78**, 487
- The centimeter radio continuum from IRC + 10216 and other late-type stars with mass-loss envelopes  
*Sahai, R., Claussen, M.J., Masson, C.R.* **220**, 92
- S 18: a new B[e] supergiant in the Small Magellanic Cloud with evidence for an accretion disk  
*Zickgraf, F.-J., Wolf, B., Stahl, O., Humphreys, R.M.* **220**, 206
- Herbig-Haro objects in flows from young stars in Orion  
*Reipurth, B.* **220**, 249
- The winds of O-stars. II. The terminal velocities of stellar winds of O-type stars  
*Groenewegen, M.A.T., Lamers, H.J.G.L.M., Pauldrach, A.W.A.* **221**, 78
- Near-infrared speckle observations of the Red Rectangle  
*Leinert, Ch., Haas, M.* **221**, 110
- Near-infrared observations and optical identifications of a few unassociated IRAS sources with dust shells  
*Iyengar, K.V.K., Ghosh, S.K., Rengarajan, T.N., Verma, R.P., Joshi, S.C., Srivastava, R.K.* **221**, 250
- Radiation-induced forces on the orbits of dust particles around rotating stars  
*Buitrago, J., Mediavilla, E., Portilla, M.* **221**, 258
- Efficiency of 1612 MHz maser emission from OH/IR stars  
*Röttgering, H.J.A.* **222**, 125
- The peculiar B[e] star MWC 623: a binary system with a Li-rich K star  
*Zickgraf, F.-J., Stahl, O.* **223**, 165
- The size distribution of dust particles in a dust-driven wind  
*Dominik, C., Gail, H.-P., Sedlmayr, E.* **223**, 227
- Emission-line stars in the Magellanic Clouds: infrared spectroscopy of B[e] and Ofpe/WN9 stars  
*McGregor, P.J., Hyland, A.R., McGinn, M.T.* **223**, 237
- Near-infrared morphology of protoplanetary nebulae: the icy dust torus of Minkowski's Footprint (M1-92)  
*Eiroa, C., Hodapp, K.-W.* **223**, 271
- The  $\beta$  Pictoris circumstellar disk. IX. Theoretical results on the infall velocities of Ca II, Al III, and Mg II  
*Beust, H., Lagrange-Henri, A.M., Vidal-Madjar, A., Ferlet, R.* **223**, 304
- The winds of O-stars. I. An analysis of the UV line profiles with the SEI method  
*Groenewegen, M.A.T., Lamers, H.J.G.L.M.* **223**, 378; **79**, 359
- The variable Herbig Ae star HR 5999. IX. Variability in the UV shell lines  
*Blondel, P.F.C., Tjin A Dje, H.R.E., Thé, P.S.* **223**, 383; **80**, 115
- A study of the ultraviolet spectrum of VV Cephei  
*Hack, M., Engin, S., Yilmaz, N.* **225**, 143
- Optical and infrared observations of four suspected proto-planetary objects  
*Le Bertre, T., Epchtein, N., Gouffes, C., Heydari-Malayeri, M., Perrier, C.* **225**, 417
- The spectral energy distribution of early-type stars. II. The extinction law towards O-type stars  
*Thé, P.S., de Winter, D., Arens, M., Heijblok, M., Nieuwland, E.R.* **226**, 415; **81**, 115
- A study of M Mira variables based on IRAS LRS observations. II. Models fits and derived parameters for 109 Miras  
*Onaka, T., de Jong, T., Willems, F.J.* **226**, 418; **81**, 261
- A reference catalogue of maser and thermal emission circumstellar SiO molecules  
*Engels, D., Heske, A.* **226**, 421; **81**, 323

**Stars: classification**

*uvby $\beta$*  photometry of peculiar B and A stars, discovered at Abastumani

*Alania, I.F., Abuladze, O.P., West, R.M.* **215**, 411; **77**, 333

A survey of F-type stars

*Jaschek, M., Andriolat, Y., Jaschek, C.* **218**, 180

Spectrophotometry of faint Wolf-Rayet stars

*Lundström, I., Stenholm, B.* **218**, 199

Estimation of stellar intrinsic colours, distances and colour excesses based on the Strömgren and H $\beta$  photometry of 804 B, A, and F stars in 10 selected areas

*Franco, G.A.P.* **218**, 339; **78**, 105

A Bayesian classification of the IRAS LRS Atlas

*Goebel, J., Volk, K., Walker, H., Gerbault, F., Cheeseman, P., Self, M., Stutz, J., Taylor, W.* **222**, L5

Spectral energy distributions of Be stars. II. Determination of Be star parameters by comparison between measured and model spectra

*Kaiser, D.* **222**, 187

HD 145206: the first semibarium star with a main-sequence close companion?

*Boffin, H.M.J., Jorissen, A.* **224**, L31

The UV silicon spectra of early B stars

*Massa, D.* **224**, 131

[Fe/H], age and distance for the F-stars of an unbiased radial velocity sample at the north galactic pole

*Knude, J.* **226**, 418; **81**, 215

The upper main sequence of OB associations. II. The single-lined O stars: spectral classification of northern stars and lines of C and N

*Mathys, G.* **226**, 418; **81**, 237

Up-to-date DDO photoelectric photometric catalogue

*Mermilliod, J.C., Nitschelm, C.* **226**, 421; **81**, 401

**Stars: collapsed**

Supernova 1987 A: envelope metallicity and the nature of the soft X-ray component

*Mastichiadis, A., Kylafis, N., Ventura, J.* **208**, L11

The new binary millisecond pulsar PSR 0021-72 A: a laboratory for gravitational physics

*Wijers, R.A.M.J.* **209**, L1

Anisotropic neutrino emission from rotating protoneutron stars

*Janka, H.-T., Mönchmeyer, R.* **209**, L5

Phase transitions in dense matter and radial pulsations of neutron stars

*Haensel, P., Zdunik, J.L., Schaeffer, R.* **217**, 137

A common envelope model for SN 1987 A

*Hillebrandt, W., Meyer, F.* **219**, L3

Monte Carlo simulations of neutrino in type II supernovae

*Janka, H.-T., Hillebrandt, W.* **219**, 363; **78**, 375

An infrared search for obscured globular clusters associated with X-ray sources

*van Paradijs, J., Isaacman, R.* **222**, 129

Composition and equation of state of cold catalyzed matter below neutron drip

*Haensel, P., Zdunik, J.L., Dobaczewski, J.* **222**, 353

Neutrino emission from type II supernovae: an analysis of the spectra

*Janka, H.-T., Hillebrandt, W.* **224**, 49

Hydrostatic post bounce configurations of collapsed rotating iron cores: neutrino emission

*Janka, H.-T., Mönchmeyer, R.* **226**, 69

**Stars: colors of**

The effects of photospheric extension upon the spectra of M-type Mira variables

*Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.* **213**, 209

Colors of extended static model photospheres of M giants

*Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.* **213**, 520; **77**, 1

An empirical colour- $T_{\text{eff}}$  calibration for G and K dwarf and subdwarf stars

*Arribas, S., Martinez Roger, C.* **215**, 305

*uvby $\beta$*  photometry of peculiar B and A stars, discovered at Abastumani

*Alania, I.F., Abuladze, O.P., West, R.M.* **215**, 411; **77**, 333

Erratum: Walraven VBLUW photometry in basel halo fields. I. Photometric data for Selected Areas SA141 (South Galactic Pole), SA94 and SA107

*Pel, J.W., Trefzger, C.F., Blaauw, A.* **217**, 394; **77**, 513

Estimation of stellar intrinsic colours, distances and colour excesses based on the Strömgren and H $\beta$  photometry of 804 B, A, and F stars in 10 selected areas

*Franco, G.A.P.* **218**, 339; **78**, 105

Catalogue of stars measured in the Geneva Observatory photometric system (fourth edition)

*Rufener, F.* **219**, 365; **78**, 469

Empirical temperature calibrations for early-type stars

*Gulati, R.K., Malagnini, M.L., Morossi, C.* **223**, 382; **80**, 73

**Stars: coronae of**

Two-dimensional isothermal magnetostatic equilibria in a gravitational field. I. Unsheared equilibria

*Amari, T., Aly, J.J.* **208**, 361

A combined radio and X-ray observation of Algol

*van den Oord, G.H.J., Kuijpers, J., White, N.E., van der Hulst, J.M., Culhane, J.L.* **209**, 296

Quiescent and flaring radio emission from the flare stars AD Leonis, EQ Pegasi, UV Ceti, Wolf 630, YY Geminorum and YZ Canis Minoris

*Jackson, P.D., Kundu, M.R., White, S.M.* **210**, 284

Broad-band spectrum of dMe star radio emission

*Güdel, M., Benz, A.O.* **211**, L5

The X-ray flare and the quiescent emission from Algol as detected by EXOSAT

*van den Oord, G.H.J., Mewe, R.* **213**, 245

An estimate of the total chromospheric, transition region and coronal radiative losses in late-type stars

*Doyle, J.G.* **214**, 258

X-ray emission from acoustically heated coronae

*Stepień, K., Ulmschneider, P.* **216**, 139

A model for a non-Keplerian magnetic accretion disk with a magnetically heated corona

*Heyvaerts, J.F., Priest, E.R.* **216**, 230

X-ray and optical observations of LDS 587

*Pasquini, L., Schmitt, J.H.M.M., Harnden, F.R., Jr., Tozzi, G.P., Krautter, J.* **218**, 187

Broadband spectral observation of a dMe star radio flare

*Güdel, M., Benz, A.O., Bastian, T.S., Fürst, E., Simnett, G.M., Davis, R.J.* **220**, L5

Time-dependent corona models: dynamical response to perturbations

*Korevaar, P., Hearn, A.G.* **220**, 177



Variable X-ray emission from the dMe star EXO 040830-7134.7  
*van der Woerd, H., Tagliaferri, G., Thomas, H.C., Beuermann, K.* **220**, 221

Current sheets in two-dimensional potential magnetic fields. I. General properties

*Aly, J.J., Amari, T.* **221**, 287

Time-dependent corona models: global relaxation oscillations  
*Korevaar, P., Hearn, A.G.* **224**, 141

Flux-flux relation: Mg II h and k versus X-rays in dwarf M and K stars

*Mathioudakis, M., Doyle, J.G.* **224**, 179

Time-dependent corona models: scaling laws  
*Korevaar, P., Martens, P.C.H.* **226**, 203

Time-dependent corona models: coronae with accretion  
*Korevaar, P.* **226**, 209

X-ray spectroscopy of RS CVn stars with EXOSAT  
*Pasquini, L., Schmitt, J.H.M.M., Pallavicini, R.* **226**, 225

### Stars: diameters of

Infrared observations and the fundamental properties of white dwarf stars

*Leggett, S.K.* **208**, 141

Observations of modulation and phase displacement of the stellar wind in six red giant spectroscopic binaries

*Reimers, D., Schröder, K.-P.* **214**, 261

Effective temperatures of Ap stars

*Stepień, K., Dominiczak, R.* **219**, 197

Radii and space orientation of the rotational axes of Ap stars  
*Stepień, K.* **220**, 105

$\theta^1$  Orionis A: a pre-main sequence low  $q$  binary system?

*Bossi, M., Gaspani, A., Scardia, M., Tadini, M.* **222**, 117

Radial velocities of southern stars obtained with the photoelectric scanner Coravel. VIII. Radial velocity variations of eleven Cepheids in the Large and Small Magellanic Clouds

*Imbert, M., Andersen, J., Ardeberg, A., Duquenois, A., Lindgren, H., Maurice, E., Mayor, M., Mermilliod, J.C., Nordström, B., Prévot, L.* **226**, 421; **81**, 339

### Stars: $\delta$ Sct

High resolution IUE observations of the flare star AD Leonis: implications for the Mg II Wilson-Bappu effect

*Ambruster, C.W., Pettersen, B.R., Sundland, S.R.* **208**, 198

Chromospheric lines in red dwarf flare stars. III

*Pettersen, B.R.* **209**, 279

Multiple close frequencies of the Delta Scuti star  $\theta^2$  Tauri. II. The second multisite campaign

*Breger, M., Garrido, R., Huang Lin, Jiang Shi-yang, Guo Zhi-he, Frueh, M., Paparo, M.* **214**, 209

Magnetic structure in cool stars. XVI. Emissions from the outer atmospheres of M-type dwarfs

*Rutten, R.G.M., Schrijver, C.J., Zwaan, C., Duncan, D.K., Mewe, R.* **219**, 239

Spectral energy distributions of Be stars. II. Determination of Be star parameters by comparison between measured and model spectra

*Kaiser, D.* **222**, 187

Studies of Cepheid-type variability. VI. Two- and three-mode resonances in Cepheid models

*Petersen, J.O.* **226**, 151

### Stars: dwarfs

Optical flares from the dwarf M star V 577 Mon (Gliese 234 AB = Ross 614)

*Doyle, J.G., van den Oord, G.H.J., Butler, C.J.* **208**, 208

Quiescent and flaring radio emission from the flare stars AD Leonis, EQ Pegasi, UV Ceti, Wolf 630, YY Geminorum and YZ Canis Minoris

*Jackson, P.D., Kundu, M.R., White, S.M.* **210**, 284

In search of real solar twins. II

*Cayrel de Strobel, G., Bentolila, C.* **211**, 324

An empirical colour- $T_{\text{eff}}$  calibration for G and K dwarf and subdwarf stars

*Arribas, S., Martinez Roger, C.* **215**, 305

X-ray and optical observations of LDS 587

*Pasquini, L., Schmitt, J.H.M.M., Harnden, F.R., Jr., Tozzi, G.P., Krautter, J.* **218**, 187

H $\alpha$  versus X-ray luminosity in dwarf M stars

*Doyle, J.G.* **218**, 195

HR 107 – an F-type mild barium dwarf star

*Tomkin, J., Lambert, D.L., Edvardsson, B., Gustafsson, B., Nissen, P.E.* **219**, L15

Flux-flux relation: Mg II h and k versus X-rays in dwarf M and K stars

*Mathioudakis, M., Doyle, J.G.* **224**, 179

### Stars: dynamics

A model for a stellar wind driven by linear acoustic waves

*Pijpers, F.P., Hearn, A.G.* **209**, 198

Capture of field stars by molecular clouds

*Bhatt, H.C.* **213**, 299

NGC 6752: a globular cluster with a resolved post-collapse core?

*Aurière, M., Ortolani, S.* **221**, 20

### Stars: early-type

An optical spiral arm beyond the Perseus arm

*Kimeswenger, S., Weinberger, R.* **209**, 51

"Normal" main sequence A0 stars of low rotational velocity

*Ramella, M., Gerbaldi, M., Faraggiana, R., Böhm, C.* **209**, 233

Non-LTE line formation in early B and late O stars. IV. Singly ionized nitrogen

*Becker, S.R., Butler, K.* **209**, 244

New aspects of the variability of the probable pre-main sequence star HR 5999

*Baade, D., Stahl, O.* **209**, 255

Infrared excess and H $\alpha$  luminosity in Be stars: a constant thickness disc model

*Kastner, J.H., Mazzali, P.A.* **210**, 295

The ultra-violet spectrum of the peculiar early-type supergiant, HD 157038

*Dufton, P.L., Lennon, D.J.* **211**, 397

An investigation of the micro variations of highly luminous OBA-type stars ( $\alpha$  Cygni variables). VIII. A study of the periodicities in the radial velocity and light variations of the nitrogen-rich supergiant HD 105056 (ON 9.7 Iae)

*van Genderen, A.M., Breukers, R.J.L.H., Houtekamer, P., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M.* **213**, 161

Absolute dimensions of eclipsing binaries. XV. EM Carinae

*Andersen, J., Clausen, J.V.* **213**, 183

- Magnitudes of central stars of southern planetary nebulae  
*Tylanda, R., Acker, A., Gleizes, F., Stenholm, B.* **213**, 520; **77**, 39
- Distribution and luminosity function of OB stars in M31  
*Berkhuijsen, E.M., Humphreys, R.M.* **214**, 68
- Polarization characteristics of galactic B[e] stars  
*Zickgraf, F.-J., Schulte-Ladbeck, R.E.* **214**, 274
- Empirical amplitude-luminosity relation of S Doradus variables and extragalactic distances  
*Wolf, B.* **217**, 87
- The distance and evolutionary phase of the Luminous Blue Variable AG Carinae  
*Humphreys, R.M., Lamers, H.J.G.L.M., Hoekzema, N., Cassatella, A.* **218**, L17
- UBV $\beta$  photometry of luminous early-type stars and emission-line stars in the Southern Coalsack region  
*Westerlund, B.E., Garnier, R.* **218**, 341; **78**, 203
- Radiation-driven winds of hot stars. VI. Analytical solutions for wind models including the finite cone angle effect  
*Kudritzki, R.P., Pauldrach, A.W.A., Puls, J., Abbott, D.C.* **219**, 205
- S 18: a new B[e] supergiant in the Small Magellanic Cloud with evidence for an excretion disk  
*Zickgraf, F.-J., Wolf, B., Stahl, O., Humphreys, R.M.* **220**, 206
- Solution of light curves with third light contribution: the eclipsing binaries LY Aurigae and AH Cephei reconsidered  
*Drechsel, H., Lorenz, R., Mayer, P.* **221**, 49
- Is HS 240 an interstellar bubble?  
*Wisotzki, L., Wendker, H.J.* **221**, 311
- Two more very massive stars resolved  
*Heydari-Malayeri, M., Magain, P., Remy, M.* **222**, 41
- OB star distances and the rotation curve of the outer Galaxy  
*Hron, J.* **222**, 85
- A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. II. Results and discussion  
*Baade, D.* **222**, 200
- Zanstra temperatures of the central stars of southern planetary nebulae  
*Gleizes, F., Acker, A., Stenholm, B.* **222**, 237
- The relation between orbital and spin periods in massive X-ray binaries  
*Waters, L.B.F.M., van Kerkwijk, M.H.* **223**, 196
- Light variations of massive stars ( $\alpha$  Cygni variables). IX  
*van Genderen, A.M., Bovenschen, H., Engelsman, E.C., Goud-frooy, P., van Haarlem, M.P., Hartmann, D., Latour, H.J., Ng, Y.K., Prein, J.J., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M., Tjardhof, W.* **223**, 376; **79**, 263
- The winds of O-stars. I. An analysis of the UV line profiles with the SEI method  
*Groenewegen, M.A.T., Lamers, H.J.G.L.M.* **223**, 378; **79**, 359
- The IUE spectral atlas of two normal B stars:  $\pi$  Ceti and  $\nu$  Capricorni (125-198 nm)  
*Artru, M.-C., Borsenberger, J., Lanz, T.* **223**, 381; **80**, 17
- Empirical temperature calibrations for early-type stars  
*Gulati, R.K., Malagnini, M.L., Morossi, C.* **223**, 382; **80**, 73
- Peculiar and normal early-type stars in the galactic halo  
*Conlon, E.S., Brown, P.J.F., Dufton, P.L., Keenan, F.P.* **224**, 65
- The UV silicon spectra of early B stars  
*Massa, D.* **224**, 131
- Chemical abundances in early B-type stars. I. Sample and metal line equivalent widths  
*Kilian, J., Nissen, P.E.* **224**, 364; **80**, 255
- Observations of the He I 10830 Å line in main-sequence O9-B9 stars and comparison with non-LTE predictions  
*Lennon, D.J., Dufton, P.L.* **225**, 439
- The far-infrared (IRAS) excess in BQ [ ] and related stars  
*Parthasarathy, M., Pottasch, S.R.* **225**, 521
- Unified NLTE model atmospheres including spherical extension and stellar winds: method and first results  
*Gabler, R., Gabler, A., Kudritzki, R.P., Puls, J., Pauldrach, A.W.A.* **226**, 162
- Stellar wind velocities and luminosities of O stars  
*Bernabeu, G., Magazzù, A., Stalio, R.* **226**, 215
- Quantitative spectroscopy of O-stars in the Magellanic Clouds. I. The young open cluster NGC 346 in the SMC  
*Kudritzki, R.P., Cabanne, M.L., Husfeld, D., Niemela, V.S., Groth, H.G., Puls, J., Herrero, A.* **226**, 235
- The spectral energy distribution of early-type stars. II. The extinction law towards O-type stars  
*Thé, P.S., de Winter, D., Arens, M., Heijblok, M., Nieuwland, E.R.* **226**, 415; **81**, 115
- The upper main sequence of OB associations. II. The single-lined O stars: spectral classification of northern stars and lines of C and N  
*Mathys, G.* **226**, 418; **81**, 237
- Stars: emission-line**
- Rotational modulation of hydrogen Lyman  $\alpha$  flux from 44  $\alpha$  Bootis  
*Vilhu, O., Neff, J.E., Rahunen, T.* **208**, 201
- Power-law dependence of the pressure broadening of spectral lines on temperature  
*Bielski, A., Bobkowski, R., Szudy, J.* **208**, 357
- New aspects of the variability of the probable pre-main sequence star HR 5999  
*Baade, D., Stahl, O.* **209**, 255
- Rapid line profile-variability of the A-type shell- and possible pre-main sequence star HD 163296  
*Baade, D., Stahl, O.* **209**, 268
- The first decade of envelope formation of 59 Cygni in the far UV and optical regions. II  
*Doazan, V., Barylak, M., Rusconi, L., Sedmak, G., Thomas, R.N., Bourdonneau, B.* **210**, 249
- Infrared excess and H  $\alpha$  luminosity in Be stars: a constant thickness disc model  
*Kastner, J.H., Mazzali, P.A.* **210**, 295
- Raman scattering as a diagnostic possibility in astrophysics  
*Nussbaumer, H., Schmid, H.M., Vogel, M.* **211**, L27
- Identification of the emission bands at  $\lambda\lambda$  6830, 7088  
*Schmid, H.M.* **211**, L31
- The nature of the cometary nebula 1548 C 27  
*Vilchez, J.M., Mampaso, A., Riera, A., Phillips, J.P.* **213**, 303
- Photometry of AS 296 in outbursts: a puzzling color evolution  
*Munari, U., Buson, L.M., Massone, G.* **214**, L5
- Polarization characteristics of galactic B[e] stars  
*Zickgraf, F.-J., Schulte-Ladbeck, R.E.* **214**, 274
- Long-term and mid-term spectroscopic variations of the Be-shell star HD 184279 (V 1294 Aquilae). II. Towards a model  
*Ballereau, D., Chauville, J.* **214**, 285

- Further observations of stars associated with the Sharpless H II region Sh 2-252, and of the Herbig A0e star Sh 2-252b  
*Chavarría-K., C., Leitherer, C., de Lara, E., Sánchez, O., Zickgraf, F.-J.* **215**, 51
- Shock phenomena in the atmosphere of the RV Tauri star, R Scuti  
*Gillet, D., Duquennoy, A., Bouchet, P., Gouiffes, C.* **215**, 316
- Empirical amplitude-luminosity relation of S Doradus variables and extragalactic distances  
*Wolf, B.* **217**, 87
- An analysis of high resolution spectra of the B[e]-stars CPD-52°9243 and MWC 300  
*Winkler, H., Wolf, B.* **219**, 151
- Spectral energy distributions of Be stars. III. Envelope models derived from new measurements for 17 stars  
*Dachs, J., Poetzel, R., Kaiser, D.* **219**, 365; **78**, 487
- S 18: a new B[e] supergiant in the Small Magellanic Cloud with evidence for an excretion disk  
*Zickgraf, F.-J., Wolf, B., Stahl, O., Humphreys, R.M.* **220**, 206
- Spectral energy distributions of Be stars. II. Determination of Be star parameters by comparison between measured and model spectra  
*Kaiser, D.* **222**, 187
- The peculiar B[e] star MWC 623: a binary system with a Li-rich K star  
*Zickgraf, F.-J., Stahl, O.* **223**, 165
- Emission-line stars in the Magellanic Clouds: infrared spectroscopy of B[e] and Ofpe/WN9 stars  
*McGregor, P.J., Hyland, A.R., McGinn, M.T.* **223**, 237
- Oscillator strengths and damping constants from the solar spectrum at  $\lambda\lambda$  830–870 nm  
*Erdelyi-Mendes, M., Barbuy, B.* **224**, 363; **80**, 229
- Emission-line profiles of two T Tauri stars with weak non-photospheric continua  
*Appenzeller, I., Wagner, S.J.* **225**, 432
- The far-infrared (IRAS) excess in BQ [ ] and related stars  
*Parthasarathy, M., Pottasch, S.R.* **225**, 521
- Stars: evolution of**
- The evolution of low-mass close binary systems with a compact component. II. Systems captured by angular momentum losses  
*Pylyser, E.H.P., Savonije, G.J.* **208**, 52
- Evolutionary status of W Ursae Majoris-type binaries: evolution into contact  
*Sarna, M.J., Fedorova, A.V.* **208**, 111
- Radiation-hydrodynamic equations for stellar oscillations  
*Da-run Xiong* **209**, 126
- Investigation of a criterion for the evolution to red giants  
*Weiss, A.* **209**, 135
- Properties of planetary nebulae. II. Central star evolution  
*Gathier, R., Pottasch, S.R.* **209**, 369
- Infrared emission from the sub-arcsecond vicinity of SN 1987A  
*Chalabaev, A.A., Perrier, C., Mariotti, J.-M.* **210**, L1
- Explosive nucleosynthesis in supernova 1978 A  
*Hashimoto, M., Nomoto, K., Shigeyama, T.* **210**, L5
- Blue stragglers and the binary hypothesis  
*Manteiga, M., Pickles, A.J., Martinez Roger, C.* **210**, 66
- Standard models of Wolf-Rayet stars  
*Langer, N.* **210**, 93
- The mass-loss evolution of oxygen-rich AGB stars and its consequences for stellar evolution  
*van der Veen, W.E.C.J.* **210**, 127
- Grids of evolutionary models from 0.85 to 120  $M_{\odot}$ : observational tests and the mass limits  
*Maeder, A., Meynet, G.* **210**, 155
- Neutron capture nucleosynthesis and the evolution of 15 and  $M_{\odot}$  stars. I. The core helium burning phase  
*Langer, N., Arcoragi, J.-P., Arnould, M.* **210**, 187
- Asynchronous rotation in close binary systems with circular orbits  
*Habets, G.M.H.J., Zwaan, C.* **211**, 56
- Absolute dimensions of eclipsing binaries. XIV. UX Mensae  
*Andersen, J., Clausen, J.V., Magain, P.* **211**, 346
- Evolution of the surface abundance of carbon in mass-exchanging binaries  
*De Greve, J.P., Cugier, H.* **211**, 356
- Integral constraints on convective overshooting  
*Roxburgh, I.W.* **211**, 361
- The ultra-violet spectrum of the peculiar early-type supergiant, HD 157038  
*Dufon, P.L., Lennon, D.J.* **211**, 397
- Non-baryonic matter from the halo and the solar neutrino problem  
*Finzi, A., Harpaz, A.* **211**, 441
- The Pleiades age and the sequential star formation  
*Mazzei, P., Pigatto, L.* **213**, L1
- The homogeneous evolution of massive stars  
*Beech, M., Mitalas, R.* **213**, 127
- Distances and mass distribution of central stars of planetary nebulae  
*Weidemann, V.* **213**, 155
- Numerical simulations of nonlocal convection  
*Da-run Xiong* **213**, 176
- Evolutionary models for detached close binaries: the systems V 539 Arae and QX Carinae  
*De Greve, J.P.* **213**, 195
- Snapshots of evolving model planetary nebulae  
*Stasińska, G.* **213**, 274
- Colors of extended static model photospheres of M giants  
*Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.* **213**, 520; **77**, 1
- Evolution of close binary systems that undergo a dynamically stable late case C mass transfer  
*Pastetter, L., Ritter, H.* **214**, 186
- HD 39853: a high velocity K 5 III star with an exceptionally large Li content  
*Gratton, R.G., D'Antona, F.* **215**, 66
- Fundamental parameters for the W Serpentis stars. II. RX Casiopeiae  
*Andersen, J., Pavlovski, K., Pirola, V.* **215**, 272
- IRAS 17516-2525: an evolved star or a young stellar object?  
*van der Veen, W.E.C.J., Geballe, T.R., Habing, H.J., van Langvelde, H.J.* **216**, L1
- The luminosity distribution of population II red giants  
*Castellani, V., Chieffi, A., Norci, L.* **216**, 62
- BVRI CCD photometry of the globular cluster NGC 3201  
*Alcaino, G., Liller, W., Alvarado, F.* **216**, 68
- The ages of globular clusters and the Sandage period-shift effect  
*Buonanno, R., Corsi, C.E., Fusi Pecci, F.* **216**, 80
- Are massive X-ray binaries runaway stars?  
*van Oijen, J.G.J.* **217**, 115
- OH maser emission from young planetary nebulae  
*Zijlstra, A.A., te Lintel Hekkert, P., Pottasch, S.R., Caswell, J.L., Ratag, M., Habing, H.J.* **217**, 157

The evolution of planetary nebulae nuclei: models against observations

*Tylenda, R., Stasińska, G.* **217**, 209

The effect of mass loss on the evolution of low-mass post-AGB stars

*Trams, N.R., Waters, L.B.F.M., Waelkens, C., Lamers, H.J.G.L.M., van der Veen, W.E.C.J.* **218**, L1

Strong lithium in the very nearby K-dwarf HD 17925

*Cayrel de Strobel, G., Cayrel, R.* **218**, L9

The distance and evolutionary phase of the Luminous Blue Variable AG Carinae

*Humphreys, R.M., Lamers, H.J.G.L.M., Hoekzema, N., Cassatella, A.* **218**, L17

Spectroscopic identification of white dwarfs in galactic clusters. V. NGC 3532

*Reimers, D., Koester, D.* **218**, 118

Optical observations of the "frosty" Leo nebula (IRAS 09371 + 1212)

*Mauron, N., Le Borgne, J.-F., Picquette, M.* **218**, 213

UBV $\beta$  photometry of luminous early-type stars and emission-line stars in the Southern Coalsack region

*Westerlund, B.E., Garnier, R.* **218**, 341; **78**, 203

The surface gravities of Ap stars: spectroscopic estimates from H $\beta$  profiles and comparison with photometry

*North, P., Kroll, R.* **218**, 343; **78**, 325

Red giants in open clusters. I. Binarity and stellar evolution in five Hyades-generation clusters: NGC 2447, 2539, 2632, 6633 and 6940

*Mermillod, J.-C., Mayor, M.* **219**, 125

Globular clusters in the Large Magellanic Cloud: NGC 1866, a test for convective overshoot

*Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S.* **219**, 167

The formation and detectability of Be + white dwarf systems

*Waters, L.B.F.M., Pols, O.R., Hogeveen, S.J., Coté, J., van den Heuvel, E.P.J.* **220**, L1

Mass-dependent mass loss rates of Wolf-Rayet stars

*Langer, N.* **220**, 135

Evolution of extreme horizontal branch stars

*Caloi, V.* **221**, 27

Evolution of planetary nebulae in the galactic bulge

*Pottasch, S.R., Acker, A.* **221**, 123

Rapid changes in the integrated light of young star clusters

*Arimoto, N., Bica, E.* **222**, 89

Non-LTE analysis of extremely helium-rich stars. I. The hot sdO stars LSE 153, 259 and 263

*Husfeld, D., Butler, K., Heber, U., Drilling, J.S.* **222**, 150

Carbon stars with oxygen-rich circumstellar envelopes?

*Zuckerman, B., Maddalena, R.J.* **223**, L20

Carbon stars with oxygen-rich circumstellar envelopes!

*de Jong, T.* **223**, L23

The Kuwano-Honda's peculiar object (PU Vulpeculae) in 1983-1986

*Belyakina, T.S., Bondar, N.I., Chochol, D., Chuvaev, K.K., Efimov, Y.S., Gershberg, R.E., Grygar, J., Hric, L., Krasnobabsev, V.I., Pirola, V., Poutanen, M., Savanov, I.S., Huovelin, J., Tuominen, I., Shakhovskaya, N.I., Shakhovskoy, N.M., Shevavr, V.I., Shcherbakov, A.G.* **223**, 119

Blue supergiant supernova progenitors

*Langer, N., El Eid, M.F., Baraffe, I.* **224**, L17

HD 145206: the first semibarium star with a main-sequence close companion?

*Boffin, H.M.J., Jorissen, A.* **224**, L31

Observed and synthesized populations of Wolf-Rayet stars: their evolution and the influence of metallicity

*Arnault, Ph., Kunth, D., Schild, H.* **224**, 73

Evolution of massive binaries including the effect of convective core overshooting

*Vanbeveren, D.* **224**, 93

White dwarf luminosity functions calculated from models of galactic evolution and the age of the galactic disk

*Yuan, J.W.* **224**, 108

Galactic population synthesis: G and K giant calibration

*Robin, A.C.* **225**, 69

A thorough spectroscopic study of the very nearby triple system: 36 Ophiuchi

*Cayrel de Strobel, G., Perrin, M.-N., Cayrel, R., Lebreton, Y.* **225**, 369

The turn-on of mass transfer in cataclysmic binaries

*D'Antona, F., Mazzitelli, I., Ritter, H.* **225**, 391

Optical and infrared observations of four suspected proto-planetary objects

*Le Bertre, T., Epchtein, N., Gouffes, C., Heydari-Malayeri, M., Perrier, C.* **225**, 417

The number of evolved early-type close binaries in the Galaxy

*Meurs, E.J.A., van den Heuvel, E.P.J.* **226**, 88

Objects in transition from the AGB to the planetary nebula stage: new visual and infrared observations

*van der Veen, W.E.C.J., Habing, H.J., Geballe, T.R.* **226**, 108

A detailed grid of evolutionary stellar models during hydrogen burning phases

*Claret, A., Giménez, A.* **226**, 415; **81**, 1

### Stars: faint blue

An optical spiral arm beyond the Perseus arm

*Kimeswenger, S., Weinberger, R.* **209**, 51

Evolution of extreme horizontal branch stars

*Caloi, V.* **221**, 27

Peculiar and normal early-type stars in the galactic halo

*Conlon, E.S., Brown, P.J.F., Dufton, P.L., Keenan, F.P.* **224**, 65

### Stars: flare

Activity in late-type dwarfs. III. Chromospheric and transition region line fluxes for two dM stars

*Byrne, P.B., Doyle, J.G.* **208**, 159

High resolution IUE observations of the flare star AD Leonis: implications for the Mg II Wilson-Bappu effect

*Ambruster, C.W., Pettersen, B.R., Sundland, S.R.* **208**, 198

Optical flares from the dwarf M star V 577 Mon (Gliese 234 AB = Ross 614)

*Doyle, J.G., van den Oord, G.H.J., Butler, C.J.* **208**, 208

A combined radio and X-ray observation of Algol

*van den Oord, G.H.J., Kuijpers, J., White, N.E., van der Hulst, J.M., Culhane, J.L.* **209**, 296

Quiescent and flaring radio emission from the flare stars AD Leonis, EQ Pegasi, UV Ceti, Wolf 630, YY Geminorum and YZ Canis Minoris

*Jackson, P.D., Kundu, M.R., White, S.M.* **210**, 284

Investigation of micro-flaring and secular and quasi-periodic variations in dMe flare stars. I. Suspected ultra-short "waves" in the dM2-3e star V1285 Aquilae

*Andrews, A.D.* **210**, 303

Broad-band spectrum of dMe star radio emission

*Güdel, M., Benz, A.O.* **211**, L5



- Coordinated observations of a large impulsive flare on UV Ceti de Jager, C., Heise, J., van Genderen, A.M., Foing, B.H., Ilyin, I.V., Kilkenny, D., Avouloupis, S., Marvridis, L., Cutispoto, G., Rodonò, M., Seeds, M.A., Yuen K.Ng., van Driel, W., Rabattu, X., Zodi, A.M., Vilas Boas, J.W.S., Scalise, E., Schaal, R.E., Kaufmann, P., Waelkens, C. **211**, 157
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. X. The 1981 October 3 flare on V711 Tauri (= HR 1099)  
Linsky, J.L., Neff, J.E., Brown, A., Gross, B.D., Simon, T., Andrews, A.D., Rodonò, M., Feldman, P.A. **211**, 173
- The X-ray flare and the quiescent emission from Algol as detected by EXOSAT  
van den Oord, G.H.J., Mewe, R. **213**, 245
- Investigation of micro-flaring and secular and quasi-periodic variations in the dMe flare stars. II. "Time signatures" of micro-variability in V 1285 Aquilae, V 645 Centauri, V 1054 Ophiuchi and AU Microscopii  
Andrews, A.D. **214**, 220
- Radio measurements in the fields of  $\gamma$ -ray sources. III. The star formation region  $\rho$ -Ophiuchi  
Schlickeiser, R., Harwit, M., Özel, M.E., Sieber, W., Younis, S.M., Schinckel, A. **216**, 197
- A spectroscopic survey of red dwarf flare stars  
Pettersen, B.R., Hawley, S.L. **217**, 187
- X-ray and optical observations of LDS 587  
Pasquini, L., Schmitt, J.H.M.M., Harnden, F.R., Jr., Tozzi, G.P., Krautter, J. **218**, 187
- Spectroscopy of poorly known northern dwarf novae. Part I  
Bruch, A. **218**, 340; **78**, 145
- A relation between Balmer and soft X-ray emission in flares  
Haisch, B.M. **219**, 317
- Broadband spectral observation of a dMe star radio flare  
Güdel, M., Benz, A.O., Bastian, T.S., Fürst, E., Simnett, G.M., Davis, R.J. **220**, L5
- The flare activity of the red dwarf binary Gliese 277 AB  
Hawley, S.L., Panov, K.P., Pettersen, B.R., Sundland, S.R. **220**, 218
- Variable X-ray emission from the dMe star EXO 040830-7134.7  
van der Woerd, H., Tagliaferri, G., Thomas, H.C., Beuermann, K. **220**, 221
- Current sheets in two-dimensional potential magnetic fields. I. General properties  
Aly, J.J., Amari, T. **221**, 287
- Activity in late-type stars. IV. The 1980 August 20 flare on Proxima Centauri revisited  
Byrne, P.B., McKay, D. **223**, 241
- Simple non-thermal models for the quiescent radio emission of dMe flare stars  
White, S.M., Kundu, M.R., Jackson, P.D. **225**, 112
- Stars: formation of**
- A newborn Trapezium within a bipolar nebula  
Neckel, T., Staude, H.J., Meisenheimer, K., Chini, R., Güsten, R. **210**, 378
- The Pleiades age and the sequential star formation  
Mazzei, P., Pigatto, L. **213**, L1
- The galactic giant H II region NGC 3603  
Melnick, J., Tapia, M., Terlevich, R. **213**, 89
- The distribution of hot thermal methanol in Orion-KL  
Wilson, T.L., Johnston, K.J., Henkel, C., Menten, K.M. **214**, 321
- Infrared images of HL Tauri: scattering from an inclined, flaring disk  
Monin, J.-L., Pudritz, R.E., Rouan, D., Lacombe, F. **215**, L1
- Extended CO ( $J=7-6$ ) emission from Orion Molecular Cloud 1: hot ambient gas, two hot-outflow sources  
Schmid-Burgk, J., Densing, R., Krügel, E., Nett, H., Röser, H.P., Schäfer, F., Schwaab, G., van der Wal, P., Wattenbach, R. **215**, 150
- CO observations in NGC 1068: physical conditions of the molecular clouds and star formation  
Planesas, P., Gómez-González, J., Martín-Pintado, J. **216**, 1
- Radio measurements in the fields of  $\gamma$ -ray sources. III. The star formation region  $\rho$ -Ophiuchi  
Schlickeiser, R., Harwit, M., Özel, M.E., Sieber, W., Younis, S.M., Schinckel, A. **216**, 197
- Search for water vapor masers in the direction of IRAS sources associated with H II regions and molecular clouds  
Braz, M.A., Scalise, Jr., E., Gregorio Hetem, J.C., Monteiro do Vale, J.L., Gaylard, M. **217**, 393; **77**, 465
- IRAS observations of the star-forming dark cloud ESO 210-6 A and the associated near-infrared source HH 47/46 IRS  
Sahu, M., Sahu, K.C., Pottasch, S.R. **218**, 221
- A scenario for the formation of astronomical objects from superstrings  
Brosche, P., Tassie, L.J. **219**, 13
- The effect of gas removal on the dynamical evolution of young stellar clusters  
Verschueren, W., David, M. **219**, 105
- Large-scale aspects of current star formation in the disk of Messier 81  
Buat, V. **220**, 49
- Optical and infrared observations of the H II region S 201  
Mampaso, A., Phillips, J.P., Vilchez, J.M., Pismis, P., Riera, A. **220**, 235
- Infrared observations of the Magellanic Clouds. I. The Small Magellanic Cloud  
Schwering, P.B.W., Israel, F.P. **220**, 343; **79**, 79
- Infrared observations of the Magellanic Clouds. II. The Large Magellanic Cloud  
Schwering, P.B.W. **220**, 343; **79**, 105
- $\theta^1$  Orionis A: a pre-main sequence low  $q$  binary system?  
Bossi, M., Gaspari, A., Scardia, M., Tadini, M. **222**, 117
- Near-infrared images of young objects in the HH 1-2 and HH 3 regions  
Roth, M., Tapia, M., Rubio, M., Rodríguez, L.F. **222**, 211
- High signal/noise  $^{13}\text{CO}$  observations of the bipolar outflow in L 1551  
Fridlund, C.V.M., White, G.J. **223**, L13
- Star formation rate and gas surface density in late-type galaxies  
Buat, V., Deharveng, J.M., Donas, J. **223**, 42
- Tidal evolution of close binary stars. II. Orbital circularization of late-type binaries  
Zahn, J.-P., Bouchet, L. **223**, 112
- The high density molecular cores near L1551-IRS5 and B335-FIR  
Menten, K.M., Harju, J., Olano, C.A., Walmsley, C.M. **223**, 258
- A search for H<sub>2</sub>O maser emission in the Serpens region  
Palla, F., Giovanardi, C. **223**, 267
- Monitoring of the SiO maser emission in W 51-IRS2: evidence for high velocity cloudlets ejected from young stars?  
Fuente, A., Martín-Pintado, J., Alcolea, J., Barcia, A. **223**, 321

**Erratum:** Star counts and IRAS sources in southern dark clouds  
*Gregorio Hetem, J.C., Sanzovo, G.C., Lépine, J.R.D.* **223**, 380;  
 79, 452

The influence of periodic external conditions on birth rates of O/B stars

*Nepveu, M.* **224**, 86

Spectral evolutionary synthesis models of metal-poor star forming regions

*Olofsson, K.* **224**, 366; **80**, 317

The molecular cloud content of early type galaxies. I. Detections and global properties

*Wiklund, T., Henkel, C.* **225**, 1

Solutions for the equilibrium of static isothermal gas clouds with poloidal magnetic fields

*Baureis, P., Ebert, R., Schmitz, F.* **225**, 405

Numerical studies on magnetic braking of interstellar clouds

*Dorfi, E.* **225**, 507

### Stars: general

The Baade-Wesselink method applied to field RR Lyrae stars. II. SW Andromedae, SW Draconis, and SS Fornacis

*Cacciari, C., Clementini, G., Prevot, L., Buser, R.* **209**, 141

The Baade-Wesselink method applied to field RR Lyrae stars. III. YZ Capricorni, RV Phoenixis, and V440 Sagittarii

*Cacciari, C., Clementini, G., Buser, R.* **209**, 154

Strömgren and H $\beta$  photometry of stars earlier than G0 in the Southern Coalsack direction

*Franco, G.A.P.* **215**, 410; **77**, 227

Abundance anomalies in main sequence A stars. I. Iron and titanium

*Lemke, M.* **225**, 125

### Stars: giant

Investigation of a criterion for the evolution to red giants

*Weiss, A.* **209**, 135

Effect of diverging magnetic fields on mass loss in late-type giant stars

*Jatenco-Pereira, V., Opher, R.* **209**, 327

Z Andromedae and the symbiotic phenomenon

*Nussbaumer, H., Vogel, M.* **213**, 137

Colors of extended static model photospheres of M giants

*Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.* **213**, 520; **77**, 1

The luminosity distribution of population II red giants

*Castellani, V., Chieffi, A., Norci, L.* **216**, 62

Red giants in open clusters. II. Orbits of ten spectroscopic binaries in NGC 2360, 2437, 2447, 5822, 5823, and 6475

*Mermilliod, J.-C., Mayor, M., Andersen, J., Nordström, B., Lindgren, H., Duquenois, A.* **220**, 341; **79**, 11

Galactic population synthesis: G and K giant calibration

*Robin, A.C.* **225**, 69

### Stars: helium

Non-LTE analysis of extremely helium-rich stars. I. The hot sdO stars LSE 153, 259 and 263

*Husfeld, D., Butler, K., Heber, U., Drilling, J.S.* **222**, 150

### Stars: Hertzsprung-Russell diagram

Properties of planetary nebulae. II. Central star evolution

*Gathier, R., Pottasch, S.R.* **209**, 369

Standard models of Wolf-Rayet stars

*Langer, N.* **210**, 93

Grids of evolutionary models from 0.85 to 120  $M_{\odot}$ : observational tests and the mass limits

*Maeder, A., Meynet, G.* **210**, 155

New *UBVR* photoelectric photometry in the field of the open cluster NGC 2467

*Feinstein, A., Vázquez, R.A.* **215**, 411; **77**, 321

Physical parameters of stars in the Scorpio-Centaurus OB association

*de Geus, E.J., de Zeeuw, P.T., Lub, J.* **216**, 44

*BVR* CCD photometry of the globular cluster NGC 3201

*Alcaino, G., Liller, W., Alvarado, F.* **216**, 68

The ages of globular clusters and the Sandage period-shift effect

*Buonanno, R., Corsi, C.E., Fusi Pecci, F.* **216**, 80

Globular clusters in the Large Magellanic Cloud: NGC 1866, a test for convective overshoot

*Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S.* **219**, 167

Evolution of massive binaries including the effect of convective core overshooting

*Vanbeveren, D.* **224**, 93

The Cepheid 1162 Aquilae

*Mavridis, L.N., Nikolov, N.S., Avgoloupis, S.I., Varvoglis, P.P.* **224**, 365; **80**, 279

Galactic population synthesis: G and K giant calibration

*Robin, A.C.* **225**, 69

A detailed grid of evolutionary stellar models during hydrogen burning phases

*Claret, A., Giménez, A.* **226**, 415; **81**, 1

Photometry and spectroscopy of the open cluster NGC 2112

*Richtler, T., Kaluzny, J.* **226**, 418; **81**, 225

### Stars: individual

#### AB Aur

Radio continuum emission from the pre-main sequence Herbig Ae star AB Aurigae

*Güdel, M., Benz, A.O., Catala, C., Praderie, F.* **217**, L9

#### AH Cep

Solution of light curves with third light contribution: the eclipsing binaries LY Aurigae and AH Cephei reconsidered

*Drechsel, H., Lorenz, R., Mayer, P.* **221**, 49

#### AK Sco

The pre-main-sequence binary system AK Scorpii

*Andersen, J., Lindgren, H., Hazen, M.L., Mayor, M.* **219**, 142

#### Algol

The H $\alpha$  profile of Algol

*Gillet, D., Mouchet, M., North, P.* **219**, 219

#### AR Lac

Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XI. Ultraviolet spectral images of AR Lacertae in September 1985

*Neff, J.E., Walter, F.M., Rodonò, M., Linsky, J.L.* **215**, 79

#### AS 296

Photometry of AS 296 in outbursts: a puzzling color evolution

*Munari, U., Buson, L.M., Massone, G.* **214**, L5

#### BF Cyg

Eclipse cross-sections of cool components in double star systems

*Isliker, H., Nussbaumer, H., Vogel, M.* **219**, 271

**BL Hyi**

A polarimetric study of the magnetic cataclysmic binary BL Hydri

*Schwope, A.D., Beuermann, K.* **222**, 132

One-pole and two-pole X-ray emission in the AM Herculis binary BL Hydri

*Beuermann, K., Schwöpe, A.D.* **223**, 179

**BW Vul**

Shock phenomena in  $\beta$  Cephei stars

*Crowe, R., Gillet, D.* **211**, 365

**CM Dra**

IUE observations of the M dwarfs CM Draconis and Rossiter 137B: magnetic activity at saturated levels

*Vilhu, O., Ambruster, C.W., Neff, J.E., Linsky, J.L., Brandenburg, A., Ilyin, I.V., Shakhovskaya, N.I.* **222**, 179

**CN Ori**

A spectroscopic study of the dwarf nova CN Orionis

*Barrera, L.H., Vogt, N.* **220**, 99

**CRL 618**

A 200 km s<sup>-1</sup> molecular outflow in the protoplanetary nebula CRL 618

*Cernicharo, J., Guélin, M., Martín-Pintado, J., Peñalver, J., Mauersberger, R.* **222**, L1

**CV Cha**

Emission-line profiles of two T Tauri stars with weak non-photospheric continua

*Appenzeller, I., Wagner, S.J.* **225**, 432

**DH 113083**

Orbital elements for double stars of Population II. The double-line high-velocity system HD 113083

*Lindgren, H., Ardeberg, A., Zuiderwijk, E.* **218**, 111

**EM Car**

Absolute dimensions of eclipsing binaries. XV. EM Carinae

*Andersen, J., Clausen, J.V.* **213**, 183

Four-colour photometry of eclipsing binaries. XXXI. Light curves of EM Carinae

*Clausen, J.V., Giménez, A., Helt, B.E., Jensen, K.S., Vaz, L.P.R.* **215**, 410; 77, 257

**EM Cyg**

VLA detection of radio emission from a dwarf nova

*Benz, A.O., Güdel, M.* **218**, 137

**Ex Hya**

The photometric periods of the intermediate polar EX Hydrae

*Siegel, N., Reinsch, K., Beuermann, K., van der Woerd, H., Wolff, E.* **225**, 97

**EXO 032957-2606.9**

EXO 032957-2606.9: a new long-period probable AM Herculis binary

*Beuermann, K., Thomas, H.C., Giommi, P., Tagliaferri, G., Schwöpe, A.D.* **219**, L7

**EXO 040830-7134.7**

Variable X-ray emission from the dMe star EXO 040830-7134.7

*van der Woerd, H., Tagliaferri, G., Thomas, H.C., Beuermann, K.* **220**, 221

**FH Ser**

Continuum emission of novae

*Andrade, A.A., Friedjung, M.* **224**, 187

**G 191-16**

Subharmonics in the variable white dwarf G 191-16

*Vauclair, G., Goupil, M.J., Baglin, A., Auvergne, M., Chevreton, M.* **215**, L17

**G 200-39**

Detection of Lyman  $\alpha$  in the spectrum of a white dwarf with helium atmosphere

*Koester, D., Weidemann, V.* **219**, 276

**GI 714**

Activity in late-type dwarfs. III. Chromospheric and transition region line fluxes for two dM stars

*Byrne, P.B., Doyle, J.G.* **208**, 159

**GI 825**

Activity in late-type dwarfs. III. Chromospheric and transition region line fluxes for two dM stars

*Byrne, P.B., Doyle, J.G.* **208**, 159

**GQ Lup**

Emission-line profiles of two T Tauri stars with weak non-photospheric continua

*Appenzeller, I., Wagner, S.J.* **225**, 432

**GQ Mus**

Continuum emission of novae

*Andrade, A.A., Friedjung, M.* **224**, 187

**HD 4778**

The magnetic field and rotation period of the Ap star HD 4778

*Bohlender, D.A.* **220**, 215

**HD 17925**

Strong lithium in the very nearby K-dwarf HD 17925

*Cayrel de Strobel, G., Cayrel, R.* **218**, L9

**HD 37479**

The distance of the helium-variable B star HD 37479

*Hunger, K., Heber, U., Groote, D.* **224**, 57

**HD 39853**

HD 39853: a high velocity K 5 III star with an exceptionally large Li content

*Gratton, R.G., D'Antona, F.* **215**, 66

**HD 86161**

Strömgren photometry of the variable Wolf-Rayet star HD 86161 = WR 16

*van Genderen, A.M., van der Hucht, K.A., Bakker, P.R.* **224**, 125

**HD 89358**

The Wolf-Rayet nebula NGC 3199 – an interstellar snow plough?

*Dyson, J.E., Ghanbari, J.* **226**, 270

**HD 112481**

HD 112481 and HD 145794, two  $\beta$  Cephei stars

*Waelkens, C., Heynderickx, D.* **208**, 129

**HD 145206**

HD 145206: the first semibarium star with a main-sequence close companion?

*Boffin, H.M.J., Jorissen, A.* **224**, L31

**HD 145794**

HD 112481 and HD 145794, two  $\beta$  Cephei stars

*Waelkens, C., Heynderickx, D.* **208**, 129

**HD 161796**

The UU Herculis star HD 161796

*Mantegazza, L., Antonello, E., Poretti, E.* **208**, 91

**HD 163296**

Rapid line profile-variability of the A-type shell- and possible pre-main sequence star HD 163296

*Baade, D., Stahl, O.* **209**, 268

Active phenomena in the pre-main sequence Herbig Ae star HD 163296

*Catala, C., Simon, T., Praderie, F., Talavera, A., Thé, P.S., Tjin A Djie, H.R.E.* **221**, 273

**HD 184279**

Long-term and mid-term spectroscopic variations of the Be-shell star HD 184279 (V 1294 Aquilae). II. Towards a model

*Ballereau, D., Chauville, J.* **214**, 285

**HD 189578**

Contribution to the study of F-G-K-M binaries. V. Orbital elements of the spectroscopic binary HD 189578

*Pédoussaut, A., Carquillat, J.M., Ginestet, N.* **219**, 364; **78**, 441

**HD 192163**

IUE observations of variability in the WN6 star HD 192163

*St-Louis, N., Smith, L.J., Stevens, I.R., Willis, A.J., Garmany, C.D., Conti, P.S.* **226**, 249

**HDE 269612**

Light variations of massive stars ( $\alpha$  Cygni variables). X. The F type supergiants G266 = HDE271182 = R92 and G322 = HDE269612 in the LMC

*van Genderen, A.M., Hadiyanto Nitihardjo, G.* **223**, 379; **79**, 401

**HDE 270100**

The new long-period Cepheid G458 = HDE 270100 in the Large Magellanic Cloud

*van Genderen, A.M., Hadiyanto Nitihardjo, G.* **221**, 230

**HDE 271182**

Light variations of massive stars ( $\alpha$  Cygni variables). X. The F type supergiants G266 = HDE271182 = R92 and G322 = HDE269612 in the LMC

*van Genderen, A.M., Hadiyanto Nitihardjo, G.* **223**, 379; **79**, 401

**Her X-1**

Can we expect a freely precessing neutron star in Her X-1?

*Bisnovatyi-Kogan, G.S., Mersov, G.A., Sheffer, E.K.* **221**, L7

**HL Tau**

Infrared images of HL Tauri: scattering from an inclined, flaring disk

*Monin, J.-L., Pudritz, R.E., Rouan, D., Lacombe, F.* **215**, L1

**HR 107**

HR 107 – an F-type mild barium dwarf star

*Tomkin, J., Lambert, D.L., Edvardsson, B., Gustafsson, B., Nissen, P.E.* **219**, L15

**HR 465**

The IUE-UV spectrum of the CP2 star HR 465

*Fuhrmann, K.* **224**, 367; **80**, 399

**HR 1225**

Non-radial oscillations in HR 1225,  $\sigma^1$  Eridani and HR 547

*Poretti, E.* **220**, 144

**HR 2039**

Four-colour photometry of eclipsing binaries. XXXII. Light curves of V 1031 Orionis

*Clausen, J.V., Nordström, B., Andersen, J.* **226**, 418; **81**, 197

**HR 4049**

Circumstellar dust around HR 4049: a critical test for theories of interstellar dust

*Waters, L.B.F.M., Lamers, H.J.G.L.M., Snow, T.P., Math-lener, E., Trams, N.R., van Hoof, P.A.M., Waelkens, C., Seab, C.G., Stanga, R.* **211**, 208

Near-infrared speckle observations of the Red Rectangle

*Leinert, Ch., Haas, M.* **221**, 110

**HR 5999**

New aspects of the variability of the probable pre-main sequence star HR 5999

*Baade, D., Stahl, O.* **209**, 255

The variable Herbig Ae star HR 5999. IX. Variability in the UV shell lines

*Blondel, P.F.C., Tjin A Djie, H.R.E., Thé, P.S.* **223**, 383; **80**, 115

**II Peg**

Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XIII. IUE spectroscopy and photometry of II Pegasi during September 1986

*Doyle, J.G., Butler, C.J., Byrne, P.B., Rodonò, M., Swank, J., Fowles, W.* **223**, 219



**IRAS 09371 + 1212**

Optical observations of the "frosty" Leo nebula (IRAS 09371 + 1212)

*Mauron, N., Le Borgne, J.-F., Picquette, M.* **218**, 213

**IRC + 10216**

Molecular line spectra from circumstellar envelopes. II. The envelope of IRC + 10216

*Schönberg, K.* **208**, 219

Discovery of strong maser emission from HCN in IRC + 10216

*Lucas, R., Cernicharo, J.* **218**, L20

The centimeter radio continuum from IRC + 10216 and other late-type stars with mass-loss envelopes

*Sahai, R., Claussen, M.J., Masson, C.R.* **220**, 92

**LMC X-4**

Analysis of the optical light curve of the massive X-ray binary LMC X-4

*Heemskerk, M.H.M., van Paradijs, J.* **223**, 154

**LY Aur**

Solution of light curves with third light contribution: the eclipsing binaries LY Aurigae and AH Cephei reconsidered

*Drechsel, H., Lorenz, R., Mayer, P.* **221**, 49

**Nova Cyg 1970**

36 revisited variable stars around Nova Cygni 1970

*Margoni, R., Stagni, R., Munari, U., Marton, S.* **226**, 421; **81**, 393

**OY Car**

Time-resolved spectroscopy of the eclipsing dwarf nova OY Carinae

*Hessman, F.V., Koester, D., Schoembs, R., Barwig, H.* **213**, 167

**Prox Cen**

Activity in late-type stars. IV. The 1980 August 20 flare on Proxima Centauri revisited

*Byrne, P.B., McKay, D.* **223**, 241

**PU Vul**

Recent spectral variation of the peculiar nova-like object PU Vulpeculae

*Iijima, T.* **215**, 57

The Kuwano-Honda's peculiar object (PU Vulpeculae) in 1983-1986

*Belyakina, T.S., Bondar, N.I., Chochol, D., Chuvaev, K.K., Efimov, Y.S., Gershberg, R.E., Grygar, J., Hric, L., Krasnobabitssev, V.I., Pirola, V., Poutanen, M., Savanov, I.S., Huovelin, J., Tuominen, I., Shakhovskaya, N.I., Shakhovskoy, N.M., Shevnaev, V.I., Shcherbakov, A.G.* **223**, 119

**R Lep**

Long-term polarimetric behaviour of the carbon Mira R Leporis

*Raveendran, A.V., Kameswara Rao, N.* **215**, 63

**R Sct**

Shock phenomena in the atmosphere of the RV Tauri star, R Scuti

*Gillet, D., Duquennoy, A., Bouchet, P., Gouffes, C.* **215**, 316

**Rossiter 137 B**

IUE observations of the M dwarfs CM Draconis and Rossiter 137B: magnetic activity at saturated levels

*Vilhu, O., Ambruster, C.W., Neff, J.E., Linsky, J.L., Brandenburg, A., Ilyin, I.V., Shakhovskaya, N.I.* **222**, 179

**RR Lep**

Photometric study of the eclipsing binary RR Leporis

*Vyas, M.L., Abhyankar, K.D.* **226**, 415; **81**, 81

**RX Cas**

Fundamental parameters for the W Serpentis stars. II. RX Casiopeiae

*Andersen, J., Pavlovski, K., Pirola, V.* **215**, 272

**RX Eri**

Shock waves of large amplitude in the atmospheres of RR Lyrae stars?

*Gillet, D., Burki, G., Crowe, R.A.* **225**, 445

**RX Hya**

Photometric analysis of the eclipsing binary RX Hydrae

*Vyas, M.L., Abhyankar, K.D.* **226**, 415; **81**, 67

**Sirius**

Planetary orbits in the elliptic restricted problem. II. The Sirius system

*Benest, D.* **223**, 361

**Sk -69°202**

The spectrograms of Sanduleak -69°202, precursor to Supernova 1987A in the Large Magellanic Cloud

*Walborn, N.R., Prévot, M.-L., Prévot, L., Wamsteker, W., González, R., Gilmozzi, R., Fitzpatrick, E.L.* **219**, 229

**T Mon**

Improved orbital parameters for the binary Cepheid T Monocerotis

*Gieren, W.P.* **216**, 135

**TT Her**

Search for contact systems among EB-type binaries. I. TT Herculis

*Milano, L., Barone, F., Mancuso, S., Russo, G., Vittone, A.A.* **210**, 181

**TX Psc**

Irregular structure of the envelope around the carbon-rich star TX Piscium

*Heske, A., te Lintel Hekkert, P., Maloney, P.R.* **218**, L5

**UCrB**

Lightcurves of the Algol-variable U CrB in the UPS photometrical system

*van Gent, R.H.* **217**, 393; **77**, 471

**UX Men**

Absolute dimensions of eclipsing binaries. XIV. UX Mensae

*Andersen, J., Clausen, J.V., Magain, P.* **211**, 346

**UZ Lib**

Properties of the components of the UZ Librae system

*Grewing, M., Bianchi, L., Garrido, R.* **223**, 172

**V 444 Cyg**

Spectroscopic variations of the V 444 Cyg system  
*Acker, A., Prévot, M.-L., Prévot, L.* **226**, 137

**V 566 Oph**

Studies of late-type binaries. III. A spectroscopic study of V 566 Ophiuchi  
*Hill, G., Fisher, W.A., Holmgren, D.* **218**, 152

**V 711 Tau**

Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. X. The 1981 October 3 flare on V711 Tauri (= HR 1099)  
*Linsky, J.L., Neff, J.E., Brown, A., Gross, B.D., Simon, T., Andrews, A.D., Rodonò, M., Feldman, P.A.* **211**, 173

**V 1031 Ori**

Four-colour photometry of eclipsing binaries. XXXII. Light curves of V 1031 Orionis  
*Clausen, J.V., Nordström, B., Andersen, J.* **226**, 418; **81**, 197

**V 1051 Ori**

Four-colour photometry of eclipsing binaries. XXXII. Light curves of V 1031 Orionis  
*Clausen, J.V., Nordström, B., Andersen, J.* **226**, 418; **81**, 197

**V 4077 Sgr**

Continuum emission of novae  
*Andrade, A.A., Friedjung, M.* **224**, 187

**Vela X-1**

An upper limit on the high-energy gamma-ray emission of Vela X-1  
*Mattox, J.R., Ögelman, H., Kanbach, G.* **226**, 145

**VV Cep**

A study of the ultraviolet spectrum of VV Cephei  
*Hack, M., Engin, S., Yilmaz, N.* **225**, 143

**VV Pup**

Optical one second quasi-periodic oscillations in VV Puppis  
*Larsson, S.* **217**, 146

**VW Cep**

Studies of late-type binaries. II. The physical parameters of VW Cephei  
*Hill, G.* **218**, 141

**V 1223 Sgr**

Detection of a brief outburst from the intermediate polar V 1223 Sgr  
*van Amerongen, S., van Paradijs, J.* **219**, 195

**W Sgr**

W Sagittarii: pulsation and orbit  
*Babel, J., Burki, G., Mayor, M., Waelkens, C., Chmielewski, Y.* **216**, 125

**Wolf 424**

The substellar masses of Wolf 424  
*Heintz, W.D.* **217**, 145

**WX Cet**

The orbital period of the cataclysmic variable WX Ceti  
*van Paradijs, J., van der Klis, M., Pedersen, H.* **225**, L5

**Z CMa**

Z CMa: a large-scale high velocity bipolar outflow traced by Herbig-Haro objects and a jet  
*Poetzel, R., Mundt, R., Ray, T.P.* **224**, L13

 **$\alpha$  Lyr**

Determination of the absolute flux from Vega at 2.250  $\mu$ m  
*Booth, A.J., Selby, M.J., Blackwell, D.E., Petford, A.D., Arribas, S.* **218**, 167

 **$\alpha$  Ori**

Wave propagation in dusty cool stellar envelopes  
*Havnes, O., Hartquist, T.W., Pilipp, W.* **217**, L13  
 Variations in the chromospheric Ca II lines of  $\alpha$  Orionis  
*Toussaint, F., Reimers, D.* **226**, L17

 **$\beta$  Per**

The X-ray flare and the quiescent emission from Algol as detected by EXOSAT  
*van den Oord, G.H.J., Mewe, R.* **213**, 245  
 The region of formation of the ultraviolet high temperature resonance lines in the eclipsing binary  $\beta$  Persei (Algol)  
*Brandt, E., Garcia, L.G., Kondo, Y., Sahade, J.* **215**, 331

 **$\beta$  Pic**

The circumstellar gas around  $\beta$  Pictoris. VIII. Evidence for a clumpy structure of the infalling gas  
*Lagrange-Henri, A.M., Beust, H., Ferlet, R., Vidal-Madjar, A.* **215**, L5  
 The  $\beta$  Pictoris circumstellar disk. IX. Theoretical results on the infall velocities of Ca II, Al III, and Mg II  
*Beust, H., Lagrange-Henri, A.M., Vidal-Madjar, A., Ferlet, R.* **223**, 304

 **$\beta$  CrB**

Pulsating CP2 stars. II.  $\gamma$  Equulei (HD 201601) and  $\beta$  Coronae Borealis (HD 137909)  
*Weiss, W.W., Schneider, H.* **224**, 101

 **$\gamma$  Cas**

Millimeter observations of the Be stars  $\psi$  Persei and  $\gamma$  Cassiopeiae  
*Waters, L.B.F.M., Boland, W., Taylor, A.R., van de Stadt, H., Lamers, H.J.G.L.M.* **213**, L19

 **$\gamma$  Equ**

Pulsating CP2 stars. II.  $\gamma$  Equulei (HD 201601) and  $\beta$  Coronae Borealis (HD 137909)  
*Weiss, W.W., Schneider, H.* **224**, 101

 **$\gamma$  Peg**

Shock phenomena in  $\beta$  Cephei stars  
*Crowe, R., Gillet, D.* **211**, 365

 **$\gamma$  Tau**

An abundance analysis of the Hyades giant  $\gamma$  Tauri: an exercise in caution  
*Griffin, R.E.M., Holweger, H.* **214**, 249

**$\epsilon$  UMa**

Mapping stellar surfaces by Doppler imaging: technique and application

Rice, J.B., Wehlau, W.H., Khokhlova, V.L. **208**, 179

 **$\nu$  Cap**

The IUE spectral atlas of two normal B stars:  $\pi$  Ceti and  $\nu$  Capricorni (125-198 nm)

Artru, M.-C., Borsenberger, J., Lanz, T. **223**, 381; **80**, 17

 **$\nu$  Eri**

Shock phenomena in  $\beta$  Cephei stars

Crowe, R., Gillet, D. **211**, 365

 **$\theta^1$  Ori A**

$\theta^1$  Orionis A: a pre-main sequence low  $q$  binary system?

Bossi, M., Gaspari, A., Scardia, M., Tadini, M. **222**, 117

 **$\pi$  Cet**

The IUE spectral atlas of two normal B stars:  $\pi$  Ceti and  $\nu$  Capricorni (125-198 nm)

Artru, M.-C., Borsenberger, J., Lanz, T. **223**, 381; **80**, 17

 **$\sigma^1$  Eri**

Non-radial oscillations in HR 1225,  $\sigma^1$  Eridani and HR 547

Poretti, E. **220**, 144

 **$\sigma$  Gem**

Long-lived active longitudes on the spotted RS CVn star  $\sigma$  Gemionum

Olah, K., Panov, K.P., Pettersen, B.R., Valtaja, E., Valtaja, L. **218**, 192

 **$\tau$  Cet**

A spectroscopic analysis of the G 8 V star  $\tau$  Ceti

Arribas, S., Crivellari, L. **210**, 211

 **$\psi$  Per**

Millimeter observations of the Be stars  $\psi$  Persei and  $\gamma$  Cassiopeiae

Waters, L.B.F.M., Boland, W., Taylor, A.R., van de Stadt, H., Lamers, H.J.G.L.M. **213**, L19

**36 Oph**

A thorough spectroscopic study of the very nearby triple system: 36 Ophiuchi

Cayrel de Strobel, G., Perrin, M.-N., Cayrel, R., Lebreton, Y. **225**, 369

**441 Boo**

Studies of late-type binaries. I. The physical parameters of 441 Bootis ABC

Hill, G., Fisher, W.A., Holmgren, D. **211**, 81

**46 Eri**

Photometric variations of 46 Eridani and 210 G Eridani

Manfroid, J., Renson, P. **223**, 187

**210 G Eri**

Photometric variations of 46 Eridani and 210 G Eridani

Manfroid, J., Renson, P. **223**, 187

**1162 Aql**

The Cepheid 1162 Aquilae

Mavridis, L.N., Nikolov, N.S., Avgoloupis, S.I., Varvoglis, P.P. **224**, 365; **80**, 279

**Stars: interior**; see Stars: structure of

**Stars: late-type**

A multifrequency study of circumstellar envelopes of cool giants and supergiants

Heske, A. **208**, 77

Activity in late-type dwarfs. III. Chromospheric and transition region line fluxes for two dM stars

Byrne, P.B., Doyle, J.G. **208**, 159

Magnetic fields in late-type dwarfs: Preliminary results from a multiline approach

Mathys, G., Solanki, S.K. **208**, 189

High resolution IUE observations of the flare star AD Leonis: implications for the Mg II Wilson-Bappu effect

Ambruster, C.W., Pettersen, B.R., Sundland, S.R. **208**, 198

Optical flares from the dwarf M star V 577 Mon (Gliese 234 AB = Ross 614)

Doyle, J.G., van den Oord, G.H.J., Butler, C.J. **208**, 208

A study of ultraviolet spectra of  $\zeta$  Aurigae/VV Cephei systems. XI. 22 Vulpeculae: IUE observations of its extended chromosphere and wind with spatial resolution

Schröder, K.-P., Reimers, D. **208**, 223

IRAS Low Resolution Spectrograph spectral class and M and S Miras

Vardya, M.S. **209**, 165

Chromospheric lines in red dwarf flare stars. III

Pettersen, B.R. **209**, 279

Time-dependent effects of acoustic wave heating and molecular cooling in the outer atmosphere of Arcturus

Cuntz, M., Muchmore, D. **209**, 305

Effect of diverging magnetic fields on mass loss in late-type giant stars

Jatenco-Pereira, V., Opher, R. **209**, 327

A spectroscopic analysis of the G 8 V star  $\tau$  Ceti

Arribas, S., Crivellari, L. **210**, 211

Excess calcium emission flux and the Rossby number

Stepień, K. **210**, 273

Asynchronous rotation in close binary systems with circular orbits

Habets, G.M.H.J., Zwaan, C. **211**, 56

$v=3$ ,  $J=1-0$  SiO maser emission from evolved stars

Alcolea, J., Bujarrabal, V., Gallego, J.D. **211**, 187

PG 1550+131: a short periodic precataclysmic binary with very deep eclipses

Haefner, R. **213**, L15

Intermediate-infrared excesses of barium stars

Hakkila, J. **213**, 204

A comparison of solar and stellar ultraviolet spectra obtained with SKYLAB and IUE

Cappelli, A., Cerruti-Sola, M., Cheng, C.C., Pallavicini, R. **213**, 226

Absolute flux calibration of the H and K lines of Ca II: chromospheric radiative losses in F and G-type stars

Pasquini, L., Pallavicini, R., Dravins, D. **213**, 261

Colors of extended static model photospheres of M giants

Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R. **213**, 520; **77**, 1

- Near-infrared survey of IRAS sources with colours like planetary nebulae  
*Manchado, A., Pottasch, S.R., García-Lario, P., Esteban, C., Mampaso, A.* **214**, 139
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XII. Near-to-simultaneous high resolution UV and optical observations of II Pegasi during July 1984  
*Byrne, P.B., Panagi, P., Doyle, J.G., Englebrecht, C.A., McMahan, R., Marang, F., Wegner, G.* **214**, 227
- An estimate of the total chromospheric, transition region and coronal radiative losses in late-type stars  
*Doyle, J.G.* **214**, 258
- A new circumstellar maser:  $^{30}\text{SiO}$   
*Barcia, A., Alcolea, J., Bujarrabal, V.* **215**, L9
- HD 39853: a high velocity K 5 III star with an exceptionally large Li content  
*Gratton, R.G., D'Antona, F.* **215**, 66
- An empirical colour- $T_{\text{eff}}$  calibration for G and K dwarf and subdwarf stars  
*Arribas, S., Martínez Roger, C.* **215**, 305
- Some comments on the methods for measuring magnetic fields in late-type stars  
*Landolfi, M., Landi Degl'Innocenti, M., Landi Degl'Innocenti, E.* **216**, 113
- X-ray emission from acoustically heated coronae  
*Stepień, K., Ulmschneider, P.* **216**, 139
- A spectroscopic survey of red dwarf flare stars  
*Pettersen, B.R., Hawley, S.L.* **217**, 187
- Irregular structure of the envelope around the carbon-rich star TX Piscium  
*Heske, A., te Lintel Hekkert, P., Maloney, P.R.* **218**, L5
- Strong lithium in the very nearby K-dwarf HD 17925  
*Cayrel de Strobel, G., Cayrel, R.* **218**, L9
- A study of M Mira variables based on IRAS LRS observations. I. Dust formation in the circumstellar shell  
*Onaka, T., de Jong, T., Willems, F.J.* **218**, 169
- X-ray and optical observations of LDS 587  
*Pasquini, L., Schmitt, J.H.M.M., Harnden, F.R., Jr., Tozzi, G.P., Krautter, J.* **218**, 187
- H $\alpha$  versus X-ray luminosity in dwarf M stars  
*Doyle, J.G.* **218**, 195
- Optical observations of the "frosty" Leo nebula (IRAS 09371 + 1212)  
*Mauron, N., Le Borgne, J.-F., Picquette, M.* **218**, 213
- IRAS 16455-3455 and IRAS 15154-5258: two new southern planetary nebulae  
*Manchado, A., García-Lario, P., Pottasch, S.R.* **218**, 267
- Observations on the variability of linear polarization in late-type dwarf stars  
*Huovelin, J., Linnaluoto, S., Tuominen, I., Virtanen, H.* **218**, 340; **78**, 129
- Magnetic structure in cool stars. XVI. Emissions from the outer atmospheres of M-type dwarfs  
*Rutten, R.G.M., Schrijver, C.J., Zwaan, C., Duncan, D.K., Mewe, R.* **219**, 239
- The centimeter radio continuum from IRC+10216 and other late-type stars with mass-loss envelopes  
*Sahai, R., Claussen, M.J., Masson, C.R.* **220**, 92
- The angular momentum loss for late-type stars  
*van 't Veer, F., Maceroni, C.* **220**, 128
- The flare activity of the red dwarf binary Gliese 277 AB  
*Hawley, S.L., Panov, K.P., Pettersen, B.R., Sundland, S.R.* **220**, 218
- Red giants in open clusters. II. Orbits of ten spectroscopic binaries in NGC 2360, 2437, 2447, 5822, 5823, and 6475  
*Mermilliod, J.-C., Mayor, M., Andersen, J., Nordström, B., Lindgren, H., Duquenois, A.* **220**, 341; **79**, 11
- A 200 km s $^{-1}$  molecular outflow in the protoplanetary nebula CRL 618  
*Cernicharo, J., Guélin, M., Martín-Pintado, J., Peñalver, J., Mauersberger, R.* **222**, L1
- The chromospheric emission from acoustically heated stellar atmospheres  
*Ulmschneider, P.* **222**, 171
- The size distribution of dust particles in a dust-driven wind  
*Dominik, C., Gail, H.-P., Sedlmayr, E.* **223**, 227
- Activity in late-type stars. IV. The 1980 August 20 flare on Proxima Centauri revisited  
*Byrne, P.B., McKay, D.* **223**, 241
- Polarimetry of solar-type stars and magnetic field diagnostics  
*Leroy, J.L., Le Borgne, J.F.* **223**, 336
- Flux-flux relation: Mg II h and k versus X-rays in dwarf M and K stars  
*Mathioudakis, M., Doyle, J.G.* **224**, 179
- Simple non-thermal models for the quiescent radio emission of dMe flare stars  
*White, S.M., Kundu, M.R., Jackson, P.D.* **225**, 112
- A thorough spectroscopic study of the very nearby triple system: 36 Ophiuchi  
*Cayrel de Strobel, G., Perrin, M.-N., Cayrel, R., Lebreton, Y.* **225**, 369
- Zeeman-Doppler imaging of active stars. II. Numerical simulation and first observational results  
*Donati, J.-F., Semel, M., Praderie, F.* **225**, 467
- Variations in the chromospheric Ca II lines of  $\alpha$  Orionis  
*Toussaint, F., Reimers, D.* **226**, L17
- X-ray spectroscopy of RS CVn stars with EXOSAT  
*Pasquini, L., Schmitt, J.H.M.M., Pallavicini, R.* **226**, 225
- A study of M Mira variables based on IRAS LRS observations. II. Models fits and derived parameters for 109 Miras  
*Onaka, T., de Jong, T., Willems, F.J.* **226**, 418; **81**, 261
- A reference catalogue of maser and thermal emission circumstellar SiO molecules  
*Engels, D., Heske, A.* **226**, 421; **81**, 323
- Stars: long-period variables**
- A multifrequency study of circumstellar envelopes of cool giants and supergiants  
*Heske, A.* **208**, 77
- IRAS Low Resolution Spectrograph spectral class and M and S Miras  
*Vardya, M.S.* **209**, 165
- The mass-loss evolution of oxygen-rich AGB stars and its consequences for stellar evolution  
*van der Veen, W.E.C.J.* **210**, 127
- $v=3$ ,  $J=1-0$  SiO maser emission from evolved stars  
*Alcolea, J., Bujarrabal, V., Gallego, J.D.* **211**, 187
- OH properties of Mira stars  
*Sivagnanam, P., Le Squeren, A.M., Foy, F., Tran Minh, F.* **211**, 341
- Infrared bolometric corrections for AGB stars with circumstellar shells  
*van der Veen, W.E.C.J., Breukers, R.J.L.H.* **213**, 133
- The effects of photospheric extension upon the spectra of M-type Mira variables  
*Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.* **213**, 209



- A new circumstellar maser:  $^{30}\text{SiO}$   
*Barcia, A., Alcolea, J., Bujarrabal, V.* **215**, L9
- Long-term polarimetric behaviour of the carbon Mira R Leporis  
*Raveendran, A.V., Kameswara Rao, N.* **215**, 63
- Driving the stellar wind of AGB stars by acoustic waves; exploration of a simple model  
*Pijpers, F.P., Habing, H.J.* **215**, 334
- Irregular structure of the envelope around the carbon-rich star TX Piscium  
*Heske, A., te Lintel Hekkert, P., Maloney, P.R.* **218**, L5
- A study of M Mira variables based on IRAS LRS observations. I. Dust formation in the circumstellar shell  
*Onaka, T., de Jong, T., Willems, F.J.* **218**, 169
- CO and SiO thermal emission in evolved stars  
*Bujarrabal, V., Gómez-González, J., Planesas, P.* **219**, 256
- A catalogue of stellar 1612 MHz maser sources  
*te Lintel Hekkert, P., Versteeg-Hensel, H.A., Habing, H.J., Wiertz, M.* **219**, 364; **78**, 399
- Radiative shocks in atomic and molecular stellar atmospheres. III. The shock wave velocity problem in Mira stars  
*Gillet, D., Lafon, J.-P.J., David, P.* **220**, 185
- Optical and infrared observations of four suspected proto-planetary objects  
*Le Bertre, T., Epchtein, N., Gouiffes, C., Heydari-Malayeri, M., Perrier, C.* **225**, 417
- A comparison between CO-, OH-, and IR-mass-loss rates of evolved stars  
*van der Veen, W.E.C.J., Rutgers, M.* **226**, 183
- A study of M Mira variables based on IRAS LRS observations. II. Models fits and derived parameters for 109 Miras  
*Onaka, T., de Jong, T., Willems, F.J.* **226**, 418; **81**, 261
- Stars: luminosities of**
- Neutron capture nucleosynthesis and the evolution of 15 and  $M_{\odot}$  stars. I. The core helium burning phase  
*Langer, N., Arcoragi, J.-P., Arnould, M.* **210**, 187
- Spectral analysis of 30 Wolf-Rayet stars  
*Schmutz, W., Hamann, W.-R., Wessolowski, U.* **210**, 236
- The bolometric corrections and the  $M/L$  relation for Wolf-Rayet stars  
*Smith, L.F., Maeder, A.* **211**, 71
- Studies of late-type binaries. I. The physical parameters of 44 Bootis ABC  
*Hill, G., Fisher, W.A., Holmgren, D.* **211**, 81
- The triple star Kpr 99  
*Heintz, W.D.* **211**, 156
- Empirical amplitude-luminosity relation of S Doradus variables and extragalactic distances  
*Wolf, B.* **217**, 87
- The distance and evolutionary phase of the Luminous Blue Variable AG Carinae  
*Humphreys, R.M., Lamers, H.J.G.L.M., Hoekzema, N., Cassatella, A.* **218**, L17
- Studies of late-type binaries. II. The physical parameters of VW Cephei  
*Hill, G.* **218**, 141
- Chromospheres of late-type active and quiescent dwarfs. I. An atlas of high resolution Ca II H profiles  
*Rebolo, R., García-López, R., Beckmann, J.E., Vladilo, G., Foing, B.H., Crivellari, L.* **224**, 362; **80**, 135
- Chromospheres of late-type active and quiescent dwarfs. II. An activity index derived from profiles of the Ca II  $\lambda$  8498 Å and  $\lambda$  8542 Å triplet lines  
*Foing, B.H., Crivellari, L., Vladilo, G., Rebolo, R., Beckmann, J.E.* **224**, 362; **80**, 189
- uvby photometry of wide visual double stars. III.  
*Oblak, E.* **224**, 364; **80**, 249
- The Cepheid 1162 Aquilae  
*Mavridis, L.N., Nikolov, N.S., Avgoloupis, S.I., Varvoglis, P.P.* **224**, 365; **80**, 279
- Galactic population synthesis: G and K giant calibration  
*Robin, A.C.* **225**, 69
- Towards a reconciliation of Cepheid masses  
*Gieren, W.P.* **225**, 381
- Stellar wind velocities and luminosities of O stars  
*Bernabeu, G., Magazzù, A., Stalio, R.* **226**, 215
- A photometric study of wide visual double stars with significant relative proper motion  
*Sinachopoulos, D.* **226**, 415; **81**, 103
- Stars: magnetic field**
- Mapping stellar surfaces by Doppler imaging: technique and application  
*Rice, J.B., Wehlau, W.H., Khokhlova, V.L.* **208**, 179
- Effect of diverging magnetic fields on mass loss in late-type giant stars  
*Jatenco-Pereira, V., Opher, R.* **209**, 327
- Spots on T Tauri stars  
*Bowier, J., Bertout, C.* **211**, 99
- The X-ray flare and the quiescent emission from Algol as detected by EXOSAT  
*van den Oord, G.H.J., Mewe, R.* **213**, 245
- Linear polarization of Babcock's star  
*Breger, M., Weiss, W.W., Wills, B.J.* **215**, 48
- The spectral variation of polarization due to magnetic intensification  
*Leroy, J.L.* **215**, 360
- Some comments on the methods for measuring magnetic fields in late-type stars  
*Landolfi, M., Landi Degl'Innocenti, M., Landi Degl'Innocenti, E.* **216**, 113
- Radio continuum emission from the pre-main sequence Herbig Ae star AB Aurigae  
*Güdel, M., Benz, A.O., Catala, C., Praderie, F.* **217**, L9
- Global modes of oscillation of magnetized stars  
*Nasiri, S., Sobouti, Y.* **217**, 127
- Optical one second quasi-periodic oscillations in VV Puppis  
*Larsson, S.* **217**, 146
- Erratum: Spots on T Tauri stars  
*Bowier, J., Bertout, C.* **218**, 337
- Observations on the variability of linear polarization in late-type dwarf stars  
*Huovelin, J., Linnaluoto, S., Tuominen, I., Virtanen, H.* **218**, 340; **78**, 129
- The generation of MHD waves by forced turbulence in a weakly magnetized fluid  
*Rosner, R., Musielak, Z.E.* **219**, L27
- Cyclotron spectrum from a dipole magnetic field accretion column  
*Canalle, J.B.G., Opher, R.* **219**, 334
- Broadband spectral observation of a dMe star radio flare  
*Güdel, M., Benz, A.O., Bastian, T.S., Fürst, E., Simnett, G.M., Davis, R.J.* **220**, L5

- The magnetic field and rotation period of the Ap star HD4778  
*Bohlender, D.A.* **220**, 215
- IUE observations of the M dwarfs CM Draconis and Rossiter 137B: magnetic activity at saturated levels  
*Vilhu, O., Ambruster, C.W., Neff, J.E., Linsky, J.L., Brandenburg, A., Ilyin, I.V., Shakhovskaya, N.I.* **222**, 179
- Polarimetry of solar-type stars and magnetic field diagnostics  
*Leroy, J.L., Le Borgne, J.F.* **223**, 336
- Non-linear dynamos. I. One-dimensional model of a thin layer dynamo  
*Schmitt, D., Schüssler, M.* **223**, 343
- Simple non-thermal models for the quiescent radio emission of dMe flare stars  
*White, S.M., Kundu, M.R., Jackson, P.D.* **225**, 112
- A generalization of the Woltjer minimum-energy principle  
*Dixon, A.M., Berger, M.A., Browning, P.K., Priest, E.R.* **225**, 156
- Zeeman-Doppler imaging of active stars. I. Basic principles  
*Semel, M.* **225**, 456
- Zeeman-Doppler imaging of active stars. II. Numerical simulation and first observational results  
*Donati, J.-F., Semel, M., Praderie, F.* **225**, 467
- Effects of radiation damping on particle motion in pulsar vacuum fields  
*Finkbeiner, B., Herold, H., Ertl, T., Ruder, H.* **225**, 479
- Dynamic stabilization of unstable gravity modes by magnetic fields in non-uniform and compressible plasmas  
*Hermans, D., Goossens, M.* **225**, 569
- Stars: mass loss**
- Resumed spin-up in GX 1 + 4  
*Greenhill, J.G., Giles, A.B., Sharma, D.P., Dieters, S., Sood, R.K., Thomas, J.A., Waldron, L., Manchanda, R.K., Carli, R., Hammer, P., Kendziorra, E., Staubert, R., Bazzano, A., Ubertini, P., La Padula, C.* **208**, L1
- Models of head-on collisions between a white dwarf and a low-mass main-sequence star  
*Różyczka, M., Yorke, H.W., Bodenheimer, P., Müller, E., Hashimoto, M.* **208**, 69
- Molecular line spectra from circumstellar envelopes. II. The envelope of IRC + 10216  
*Schönberg, K.* **208**, 219
- A study of ultraviolet spectra of  $\zeta$  Aurigae/VV Cephei systems. XI. 22 Vulpeculae: IUE observations of its extended chromosphere and wind with spatial resolution  
*Schröder, K.-P., Reimers, D.* **208**, 223
- Outflow velocities from carbon stars  
*Zuckerman, B., Dyck, H.M.* **209**, 119
- A model for a stellar wind driven by linear acoustic waves  
*Pijpers, F.P., Hearn, A.G.* **209**, 198
- Rapid line profile-variability of the A-type shell- and possible pre-main sequence star HD 163296  
*Baade, D., Stahl, O.* **209**, 268
- Effect of diverging magnetic fields on mass loss in late-type giant stars  
*Jatenco-Pereira, V., Opher, R.* **209**, 327
- Molecular emission lines from the envelopes of evolved stars  
*Sopka, R.J., Olofsson, H., Johansson, L.E.B., Nguyen-Q-Rieu, Zuckerman, B.* **210**, 78
- The mass-loss evolution of oxygen-rich AGB stars and its consequences for stellar evolution  
*van der Veen, W.E.C.J.* **210**, 127
- Stability of accretion in low mass X-ray binaries  
*Schwarzenberg-Czerny, A.* **210**, 174
- Spectral analysis of 30 Wolf-Rayet stars  
*Schmutz, W., Hamann, W.-R., Wessolowski, U.* **210**, 236
- The first decade of envelope formation of 59 Cygni in the far UV and optical regions. II  
*Doazan, V., Barylak, M., Rusconi, L., Sedmak, G., Thomas, R.N., Bourdonneau, B.* **210**, 249
- Infrared excess and H $\alpha$  luminosity in Be stars: a constant thickness disc model  
*Kastner, J.H., Mazzali, P.A.* **210**, 295
- CO outflow and properties of the molecular gas around the far-infrared point source IRAS 04325-1419 in Lynds 1642  
*Liljeström, T., Mattila, K., Friberg, P.* **210**, 337
- Optical spectroscopy and near-infrared mapping of S 106  
*Riera, A., Mampaso, A., Phillips, J.P., Vilchez, J.M.* **210**, 351
- The structure of the molecular gas in the young planetary nebula NGC 2346  
*Bachiller, R., Planesas, P., Martin-Pintado, J., Bujarrabal, V., Tafalla, M.* **210**, 366
- The bolometric corrections and the  $M/L$  relation for Wolf-Rayet stars  
*Smith, L.F., Maeder, A.* **211**, 71
- OH properties of Mira stars  
*Sivagnanam, P., Le Squeren, A.M., Foy, F., Tran Minh, F.* **211**, 341
- Evolution of the surface abundance of carbon in mass-exchanging binaries  
*De Greve, J.P., Cugier, H.* **211**, 356
- Evolutionary models for detached close binaries: the systems V 539 Arae and QX Carinae  
*De Greve, J.P.* **213**, 195
- The nature of the cometary nebula 1548 C 27  
*Vilchez, J.M., Mampaso, A., Riera, A., Phillips, J.P.* **213**, 303
- Observations of modulation and phase displacement of the stellar wind in six red giant spectroscopic binaries  
*Reimers, D., Schröder, K.-P.* **214**, 261
- Extended CO ( $J=7-6$ ) emission from Orion Molecular Cloud 1: hot ambient gas, two hot-outflow sources  
*Schmid-Burgk, J., Densing, R., Krügel, E., Nett, H., Röser, H.P., Schäfer, F., Schwaab, G., van der Wal, P., Wattenbach, R.* **215**, 150
- Driving the stellar wind of AGB stars by acoustic waves; exploration of a simple model  
*Pijpers, F.P., Habing, H.J.* **215**, 334
- Mass loss rate and atmospheric turbulence of the B2 hypergiant HD 80077  
*Carpay, J., de Jager, C., Nieuwenhuijzen, H., Moffat, A.* **216**, 143
- Radio continuum emission from the pre-main sequence Herbig Ae star AB Aurigae  
*Güdel, M., Benz, A.O., Catala, C., Praderie, F.* **217**, L9
- Wave propagation in dusty cool stellar envelopes  
*Havnes, O., Hartquist, T.W., Pilipp, W.* **217**, L13
- VLBI observations of  $\theta^1$  Orionis A  
*Felli, M., Massi, M., Churchwell, E.* **217**, 179
- The effect of mass loss on the evolution of low-mass post-AGB stars  
*Trams, N.R., Waters, L.B.F.M., Waelkens, C., Lamers, H.J.G.L.M., van der Veen, W.E.C.J.* **218**, L1
- A study of M Mira variables based on IRAS LRS observations. I. Dust formation in the circumstellar shell  
*Onaka, T., de Jong, T., Willems, F.J.* **218**, 169

- Rotating  $\text{H}^{13}\text{CO}^+$  disk and corotating  $\text{H}^{12}\text{CO}^+$  lobes in the L1551 outflow source  
*Liljeström, T.* **219**, L19
- Radiation-driven winds of hot stars. VI. Analytical solutions for wind models including the finite cone angle effect  
*Kudritzki, R.P., Pauldrach, A.W.A., Puls, J., Abbott, D.C.* **219**, 205
- Revisited mass-loss rates for a sample of central stars of planetary nebulae  
*Hutsemekers, D., Surdej, J.* **219**, 237
- CO and SiO thermal emission in evolved stars  
*Bujarrabal, V., Gómez-González, J., Planesas, P.* **219**, 256
- Radiation pressure on circumstellar grains. Opacity effects  
*Lefèvre, J.* **219**, 265
- Eclipse cross-sections of cool components in double star systems  
*Islikier, H., Nussbaumer, H., Vogel, M.* **219**, 271
- The centimeter radio continuum from IRC+10216 and other late-type stars with mass-loss envelopes  
*Sahai, R., Claussen, M.J., Masson, C.R.* **220**, 92
- Mass-dependent mass loss rates of Wolf-Rayet stars  
*Langer, N.* **220**, 135
- S18: a new B[e] supergiant in the Small Magellanic Cloud with evidence for an excretion disk  
*Zickgraf, F.-J., Wolf, B., Stahl, O., Humphreys, R.M.* **220**, 206
- The winds of O-stars. II. The terminal velocities of stellar winds of O-type stars  
*Groenewegen, M.A.T., Lamers, H.J.G.L.M., Pauldrach, A.W.A.* **221**, 78
- Active phenomena in the pre-main sequence Herbig Ae star HD163296  
*Catala, C., Simon, T., Praderie, F., Talavera, A., Thé, P.S., Tjin A Djie, H.R.E.* **221**, 273
- A  $200 \text{ km s}^{-1}$  molecular outflow in the protoplanetary nebula CRL 618  
*Cernicharo, J., Guélin, M., Martín-Pintado, J., Peñalver, J., Mauersberger, R.* **222**, L1
- Efficiency of 1612 MHz maser emission from OH/IR stars  
*Röttgering, H.J.A.* **222**, 125
- Carbon stars with oxygen-rich circumstellar envelopes?  
*Zuckerman, B., Maddalena, R.J.* **223**, L20
- Carbon stars with oxygen-rich circumstellar envelopes!  
*de Jong, T.* **223**, L23
- The relation between orbital and spin periods in massive X-ray binaries  
*Waters, L.B.F.M., van Kerkwijk, M.H.* **223**, 196
- Echelle observations of the high speed motions in the extreme bipolar nebula He2-111 (PK 315  $-0^\circ 1'$ )  
*Meaburn, J., Walsh, J.R.* **223**, 277
- The winds of O-stars. I. An analysis of the UV line profiles with the SEI method  
*Groenewegen, M.A.T., Lamers, H.J.G.L.M.* **223**, 378; **79**, 359
- The variable Herbig Ae star HR 5999. IX. Variability in the UV shell lines  
*Blondel, P.F.C., Tjin A Djie, H.R.E., Thé, P.S.* **223**, 383; **80**, 115
- Z CMa: a large-scale high velocity bipolar outflow traced by Herbig-Haro objects and a jet  
*Poetzel, R., Mundt, R., Ray, T.P.* **224**, L13
- Time-dependent corona models: global relaxation oscillations  
*Korevaar, P., Hearn, A.G.* **224**, 141
- The turn-on of mass transfer in cataclysmic binaries  
*D'Antona, F., Mazzitelli, I., Ritter, H.* **225**, 391
- Variations in the chromospheric Ca II lines of  $\alpha$  Orionis  
*Toussaint, F., Reimers, D.* **226**, L17
- Objects in transition from the AGB to the planetary nebula stage: new visual and infrared observations  
*van der Veen, W.E.C.J., Habing, H.J., Geballe, T.R.* **226**, 108
- Unified NLTE model atmospheres including spherical extension and stellar winds: method and first results  
*Gabler, R., Gabler, A., Kudritzki, R.P., Puls, J., Pauldrach, A.W.A.* **226**, 162
- A comparison between CO-, OH-, and IR-mass-loss rates of evolved stars  
*van der Veen, W.E.C.J., Rutgers, M.* **226**, 183
- Time-dependent corona models: scaling laws  
*Korevaar, P., Martens, P.C.H.* **226**, 203
- Stellar wind velocities and luminosities of O stars  
*Bernabeu, G., Magazzù, A., Stalio, R.* **226**, 215
- IUE observations of variability in the WN6 star HD 192163  
*St-Louis, N., Smith, L.J., Stevens, I.R., Willis, A.J., Garmany, C.D., Conti, P.S.* **226**, 249
- The Wolf-Rayet nebula NGC 3199 – an interstellar snow plough?  
*Dyson, J.E., Ghanbari, J.* **226**, 270
- A study of M Mira variables based on IRAS LRS observations. II. Models fits and derived parameters for 109 Miras  
*Onaka, T., de Jong, T., Willems, F.J.* **226**, 418; **81**, 261
- Stars: mass of**
- Infrared observations and the fundamental properties of white dwarf stars  
*Leggett, S.K.* **208**, 141
- A spectroscopic analysis of the G8 V star  $\tau$  Ceti  
*Arribas, S., Crivellari, L.* **210**, 211
- Studies of late-type binaries. I. The physical parameters of 44 Bootis ABC  
*Hill, G., Fisher, W.A., Holmgren, D.* **211**, 81
- Absolute dimensions of eclipsing binaries. XIV. UX Mensae  
*Andersen, J., Clausen, J.V., Magain, P.* **211**, 346
- Absolute dimensions of eclipsing binaries. XV. EM Carinae  
*Andersen, J., Clausen, J.V.* **213**, 183
- Fundamental parameters for the W Serpentis stars. II. RX Casiopeiae  
*Andersen, J., Pavlovski, K., Pirola, V.* **215**, 272
- The substellar masses of Wolf 424  
*Heintz, W.D.* **217**, 145
- Studies of late-type binaries. II. The physical parameters of VW Cephei  
*Hill, G.* **218**, 141
- The distance of the helium-variable B star HD 37479  
*Hunger, K., Heber, U., Groote, D.* **224**, 57
- A thorough spectroscopic study of the very nearby triple system: 36 Ophiuchi  
*Cayrel de Strobel, G., Perrin, M.-N., Cayrel, R., Lebreton, Y.* **225**, 369
- Towards a reconciliation of Cepheid masses  
*Gieren, W.P.* **225**, 381
- Spectroscopic variations of the V 444 Cyg system  
*Acker, A., Prévot, M.-L., Prévot, L.* **226**, 137
- Stars: Mira; see Stars: long-period variables**
- Stars: neutron**
- The relativistic "looks" of a neutron star  
*Nollert, H.-P., Ruder, H., Herold, H., Kraus, U.* **208**, 153

- Explosive nucleosynthesis in supernova 1978 A  
*Hashimoto, M., Nomoto, K., Shigeyama, T.* **210**, L5
- Stability of accretion in low mass X-ray binaries  
*Schwarzenberg-Czerny, A.* **210**, 174
- X-ray emission from  $\gamma$ -ray bursters  
*Hameury, J.M., Lasota, J.P.* **211**, L15
- LMC X-2: an extragalactic bulge-type source  
*Bonnet-Bidaud, J.M., Motch, C., Beuermann, K., Pakull, M.W., Parmar, A.N., van der Klis, M.* **213**, 97
- The nature of absorption features in the spectra of gamma-ray bursts  
*Bisnovatyi-Kogan, G.S., Illarionov, A.F.* **213**, 107
- Constraints on the optical counterpart of GBS 0526-66  
*Boer, M., Hurley, K., Gottardi, M., Motch, C., Pedersen, H., Simonsen, R.L.* **214**, 148
- Soft X-ray observations of the Vela pulsar PSR 0833-45  
*Ögelmann, H., Zimmermann, H.-U.* **214**, 179
- A precessing neutron star model for E 2259+586  
*Carlini, A., Treves, A.* **215**, 283
- Phase transitions in dense matter and radial pulsations of neutron stars  
*Haensel, P., Zdunik, J.L., Schaeffer, R.* **217**, 137
- SS 433 – the puzzle continues  
*Brinkmann, W., Kawai, N., Matsuoka, M.* **218**, L13
- The birthrates of galactic low mass binary radio pulsars and their progenitor systems  
*Côté, J., Pylyser, E.H.P.* **218**, 131
- Spectral evolution of a burst from MXB 1728-34 and constraints on burst parameters  
*Kaminker, A.D., Pavlov, G.G., Shibano, Y.A., Kurt, V.G., Smirnov, A.S., Shamolin, V.M., Kopaeva, I.F., Sheffer, E.K.* **220**, 117
- Can we expect a freely precessing neutron star in Her X-1?  
*Bisnovatyi-Kogan, G.S., Mersov, G.A., Sheffer, E.K.* **221**, L7
- Inhomogeneous wind accretion: comparison between 3D and 2D computations  
*Sawada, K., Matsuda, T., Anzer, U., Börner, G., Livio, M.* **221**, 263
- EXOSAT observations of five luminous globular cluster X-ray sources  
*Parmar, A.N., Stella, L., Giommi, P.* **222**, 96
- An infrared search for obscured globular clusters associated with X-ray sources  
*van Paradijs, J., Isaacman, R.* **222**, 129
- Composition and equation of state of cold catalyzed matter below neutron drip  
*Haensel, P., Zdunik, J.L., Dobaczewski, J.* **222**, 353
- The probability of detecting absorption features in gamma-ray burst spectra  
*Melia, F.* **223**, L9
- X-ray light curves of Be/X-ray binaries  
*Waters, L.B.F.M., de Martino, D., Habets, G.M.H.J., Taylor, A.R.* **223**, 207
- Towards a self-consistent description of accretion columns. III. Radiation pattern and computer-generated pictures of the emission region  
*Kraus, U., Herold, H., Maile, T., Nollert, H.-P., Rebetzky, A., Ruder, H., Wolf, K.* **223**, 246
- A numerical survey of relativistic rotating neutron star structures using the Hartle-Thorne formalism  
*Thomas, J.M.* **223**, 375; **79**, 189
- Spectral classification of low-mass X-ray binary (LMXB) energy spectra with color-color diagrams  
*Schulz, N.S., Hasinger, G., Trümper, J.* **225**, 48
- Two patterns of correlated X-ray timing and spectral behaviour in low-mass X-ray binaries  
*Hasinger, G., van der Klis, M.* **225**, 79
- Towards a self-consistent description of accretion columns. II. Frequency-dependent radiation hydrodynamics  
*Rebetzky, A., Bock, U., Herold, H., Kraus, U., Maile, T., Nollert, H.-P., Ruder, H., Wolf, K.* **225**, 137
- Synchrotron pair cascades in strong magnetic fields  
*Baring, M.G.* **225**, 260
- Effects of radiation damping on particle motion in pulsar vacuum fields  
*Finkbeiner, B., Herold, H., Ertl, T., Ruder, H.* **225**, 479
- Stars: novae and cataclysmic variables**
- The evolution of low-mass close binary systems with a compact component. II. Systems captured by angular momentum losses  
*Pylyser, E.H.P., Savonije, G.J.* **208**, 52
- "Mixed" mass transfer- and disk-instability models for dwarf nova eruptions  
*Duschl, W.J., Livio, M.* **209**, 183
- Time-resolved spectroscopy of the eclipsing dwarf nova OY Carinae  
*Hessman, F.V., Koester, D., Schoembs, R., Barwig, H.* **213**, 167
- Recent spectral variation of the peculiar nova-like object PU Vulpeculae  
*Iijima, T.* **215**, 57
- VLA detection of radio emission from a dwarf nova  
*Benz, A.O., Güdel, M.* **218**, 137
- Theoretical aspects of two  $\alpha$ -distributions in accretion disks  
*Adam, J., Störzer, H., Duschl, W.J.* **218**, 205
- Spectroscopy of poorly known northern dwarf novae. Part I  
*Bruch, A.* **218**, 340; **78**, 145
- EXO 032957-2606.9: a new long-period probable AM Herculis binary  
*Beuermann, K., Thomas, H.C., Giommi, P., Tagliaferri, G., Schwöpe, A.D.* **219**, L7
- Detection of a brief outburst from the intermediate polar V 1223 Sgr  
*van Amerongen, S., van Paradijs, J.* **219**, 195
- A spectroscopic study of the dwarf nova CN Orionis  
*Barrera, L.H., Vogt, N.* **220**, 99
- Constraints from the UV delay in dwarf nova outbursts  
*Meyer, F., Meyer-Hofmeister, E.* **221**, 36
- A polarimetric study of the magnetic cataclysmic binary BL Hy-dri  
*Schwöpe, A.D., Beuermann, K.* **222**, 132
- The Kuwano-Honda's peculiar object (PU Vulpeculae) in 1983–1986  
*Belyakina, T.S., Bondar, N.I., Chochol, D., Chuvaev, K.K., Efimov, Y.S., Gershberg, R.E., Grygar, J., Hric, L., Krasnobabitssev, V.I., Pirola, V., Poutanen, M., Savanov, I.S., Huovelin, J., Tuominen, I., Shakhovskaya, N.I., Shakhovskoy, N.M., Shevchuk, V.I., Shcherbakov, A.G.* **223**, 119
- Echelle observations of the high speed motions in the extreme bipolar nebula He2-111 (PK 315 – 0°1)  
*Meaburn, J., Walsh, J.R.* **223**, 277
- Simultaneous *UBVRI* photometry of Nova DQ Herculis (1934)  
*Schoembs, R., Rebhan, H.* **224**, 42



- Evolution of massive binaries including the effect of convective core overshooting  
*Vanbeveren, D.* **224**, 93
- Gravity-darkening for stars with a Roche lobe filling convective envelopes in close binary systems  
*Sarna, M.J.* **224**, 98
- Continuum emission of novae  
*Andrade, A.A., Friedjung, M.* **224**, 187
- The orbital period of the cataclysmic variable WX Ceti  
*van Paradijs, J., van der Klis, M., Pedersen, H.* **225**, L5
- The photometric periods of the intermediate polar EX Hydrae  
*Siegel, N., Reinsch, K., Beuermann, K., van der Woerd, H., Wolff, E.* **225**, 97
- Accretion disk models with a self-consistent viscosity parameter  $\alpha$  in convective zones  
*Duschl, W.J.* **225**, 105
- The turn-on of mass transfer in cataclysmic binaries  
*D'Antona, F., Mazzitelli, I., Ritter, H.* **225**, 391
- 36 revisited variable stars around Nova Cygni 1970  
*Margoni, R., Stagni, R., Munari, U., Marton, S.* **226**, 421; **81**, 393
- Stars: OH/IR**
- The mass-loss evolution of oxygen-rich AGB stars and its consequences for stellar evolution  
*van der Veen, W.E.C.J.* **210**, 127
- The dynamics of the Calabash Nebula  
*Icke, V., Preston, H.L.* **211**, 409
- Infrared bolometric corrections for AGB stars with circumstellar shells  
*van der Veen, W.E.C.J., Breukers, R.J.L.H.* **213**, 133
- Driving the stellar wind of AGB stars by acoustic waves; exploration of a simple model  
*Pijpers, F.P., Habing, H.J.* **215**, 334
- OH maser emission from young planetary nebulae  
*Zijlstra, A.A., te Lintel Hekkert, P., Pottasch, S.R., Caswell, J.L., Ratag, M., Habing, H.J.* **217**, 157
- A study of M Mira variables based on IRAS LRS observations. I. Dust formation in the circumstellar shell  
*Onaka, T., de Jong, T., Willems, F.J.* **218**, 169
- A catalogue of stellar 1612 MHz maser sources  
*te Lintel Hekkert, P., Versteeg-Hensel, H.A., Habing, H.J., Wiertz, M.* **219**, 364; **78**, 399
- Efficiency of 1612 MHz maser emission from OH/IR stars  
*Röttgering, H.J.A.* **222**, 125
- Bipolar radio morphology in the compact nebula K 3-35  
*Aaquist, O.B., Kwok, S.* **222**, 227
- Optical and infrared observations of four suspected proto-planetary objects  
*Le Bertre, T., Epchtein, N., Gouffes, C., Heydari-Malayeri, M., Perrier, C.* **225**, 417
- Objects in transition from the AGB to the planetary nebula stage: new visual and infrared observations  
*van der Veen, W.E.C.J., Habing, H.J., Geballe, T.R.* **226**, 108
- A comparison between CO-, OH-, and IR-mass-loss rates of evolved stars  
*van der Veen, W.E.C.J., Rugers, M.* **226**, 183
- Stars: oscillations of**
- The thermal surface boundary condition for stellar pulsations  
*Gabriel, M.* **208**, 122
- HD 112481 and HD 145794, two  $\beta$  Cephei stars  
*Waelkens, C., Heynderickx, D.* **208**, 129
- The maximum amplitude of the optical micro-variations of massive O-F type stars (or  $\alpha$  Cygni variables, including LBV's or S Dor variables) across the HR diagram  
*van Genderen, A.M.* **208**, 135
- Photometric analysis of RR Lyrae stars. I. The multiperiodic ST CVn  
*Peniche, R., Gomez, T., Parrao, L., Peña, J.H.* **209**, 59
- Radiation-hydrodynamic equations for stellar oscillations  
*Da-run Xiong* **209**, 126
- A model for a stellar wind driven by linear acoustic waves  
*Pijpers, F.P., Hearn, A.G.* **209**, 198
- Rapid line profile-variability of the A-type shell- and possible pre-main sequence star HD 163296  
*Baade, D., Stahl, O.* **209**, 268
- Pulsating CP2 stars. I.  $\alpha$  Circini (HD 128898)  
*Schneider, H., Weiss, W.W.* **210**, 147
- Tidal effects in rotating close binaries  
*Rocca, A.* **213**, 114
- Subharmonics in the variable white dwarf G 191-16  
*Vauclair, G., Goupil, M.J., Baglin, A., Auvergne, M., Chevreton, M.* **215**, L17
- Global modes of oscillation of magnetized stars  
*Nasiri, S., Sobouti, Y.* **217**, 127
- Non-radial oscillations in HR 1225,  $\sigma^1$  Eridani and HR 547  
*Poretti, E.* **220**, 144
- Search for radial velocity variations in rapidly oscillating Ap stars using the Fabry-Perot interferometric stellar oscillation spectrometer  
*Belmonte, J.A., Bell, C.R., Leeper, M., Pallé, P.L., Pietraszewski, K.A.R.B., Renton, R.E., Roca Cortés, T.* **221**, 41
- The Oosterhoff dichotomy revisited. II. Pulsational constraints on the luminosity of RR Lyrae variables in OoII and OoI globular clusters  
*Caputo, F., Castellani, V., Tornambé, A.* **222**, 121
- A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. II. Results and discussion  
*Baade, D.* **222**, 200
- Photometric variations of 46 Eridani and 210 G Eridani  
*Manfroid, J., Renson, P.* **223**, 187
- A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. I. Observations and measurements  
*Baade, D.* **223**, 380; **79**, 423
- Studies of Cepheid-type variability. VI. Two- and three-mode resonances in Cepheid models  
*Petersen, J.O.* **226**, 151
- The  $D_{\text{el}}$  values and the structure of the solar core  
*Gabriel, M.* **226**, 278
- Radial velocities of southern stars obtained with the photoelectric scanner Coravel. VIII. Radial velocity variations of eleven Cepheids in the Large and Small Magellanic Clouds  
*Imbert, M., Andersen, J., Ardeberg, A., Duquennoy, A., Lindgren, H., Maurice, E., Mayor, M., Merriliod, J.C., Nordström, B., Prévot, L.* **226**, 421; **81**, 339
- Stars: peculiar A**
- Mapping stellar surfaces by Doppler imaging: technique and application  
*Rice, J.B., Wehlau, W.H., Khokhlova, V.L.* **208**, 179
- Pulsating CP2 stars. I.  $\alpha$  Circini (HD 128898)  
*Schneider, H., Weiss, W.W.* **210**, 147
- Linear polarization of Babcock's star  
*Breger, M., Weiss, W.W., Wills, B.J.* **215**, 48

- uvby $\beta$*  photometry of peculiar B and A stars, discovered at Abastumani  
*Alania, I.F., Abuladze, O.P., West, R.M.* **215**, 411; **77**, 333  
 Element identifications in IUE spectra of chemically peculiar stars: the Pt-Au-Hg sequence  
*Fuhrmann, K.* **217**, 391; **77**, 345  
*UBV* photometry and the structure of the galactic cluster NGC 2516  
*Dachs, J., Kabus, H.* **218**, 338; **78**, 25  
 The surface gravities of Ap stars: spectroscopic estimates from H $\beta$  profiles and comparison with photometry  
*North, P., Kroll, R.* **218**, 343; **78**, 325  
 Effective temperatures of Ap stars  
*Stepień, K., Dominiczak, R.* **219**, 197  
*Aa*-photometry of  $\lambda$  Bootis stars  
*Maitzen, H.M., Pavlovski, K.* **219**, 253  
 Erratum et addendum: Catalogue of Ap and Am stars in open clusters  
*Renson, P.* **219**, 366; **78**, 533  
 Radii and space orientation of the rotational axes of Ap stars  
*Stepień, K.* **220**, 105  
 Am stars of the Hyades cluster: temperatures, lithium, and the heavier elements, Al, Si, and Fe  
*Burkhart, C., Coupry, M.F.* **220**, 197  
 The magnetic field and rotation period of the Ap star HD 4778  
*Bohlender, D.A.* **220**, 215  
 Search for radial velocity variations in rapidly oscillating Ap stars using the Fabry-Perot interferometric stellar oscillation spectrometer  
*Belmonte, J.A., Bell, C.R., Leeper, M., Pallé, P.L., Pietraszewski, K.A.R.B., Renton, R.E., Roca Cortés, T.* **221**, 41  
 Pulsating CP2 stars. II.  $\gamma$  Equulei (HD 201601) and  $\beta$  Coronae Borealis (HD 137909)  
*Weiss, W.W., Schneider, H.* **224**, 101  
 Heavy elements in the 2000–3000 Å range of four Ap stars  
*Faraggiana, R.* **224**, 162  
 Behaviour of the OI triplet at  $\lambda$  7773. III. Am stars  
*van 't Veer-Menneret, C., Faraggiana, R., Gerbaldi, M., Castelli, F., Burkhart, C., Floquet, M.* **224**, 171  
 The IUE-UV spectrum of the CP2 star HR 465  
*Fuhrmann, K.* **224**, 367; **80**, 399  
 Behaviour of OI triplet at  $\lambda$  7773. II. Ap stars  
*Gerbaldi, M., Floquet, M., Faraggiana, R., van 't Veer-Menneret, C.* **226**, 415; **81**, 127  
 A catalog of stellar spectrophotometry  
*Adelman, S.J., Pyper, D.M., Shore, S.N., White, R.E., Warren, Jr., W.H.* **226**, 418; **81**, 221  
 Further *Ax*-photometry of  $\lambda$  Bootis stars  
*Maitzen, H.M., Pavlovski, K.* **226**, 421; **81**, 335
- Stars: Population I**  
 Standard models of Wolf-Rayet stars  
*Langer, N.* **210**, 93  
 In search of real solar twins. II  
*Cayrel de Strobel, G., Bentolila, C.* **211**, 324  
 A catalog of stellar spectrophotometry  
*Adelman, S.J., Pyper, D.M., Shore, S.N., White, R.E., Warren, Jr., W.H.* **226**, 418; **81**, 221
- Stars: Population II**  
 The chemical composition of the extreme halo stars. I. Blue spectra of 20 dwarfs  
*Magain, P.* **209**, 211
- BVR* CCD photometry of the globular cluster NGC 3201  
*Alcaino, G., Liller, W., Alvarado, F.* **216**, 68  
 The ages of globular clusters and the Sandage period-shift effect  
*Buonanno, R., Corsi, C.E., Fusi Pecci, F.* **216**, 80  
 The effect of mass loss on the evolution of low-mass post-AGB stars  
*Trams, N.R., Waters, L.B.F.M., Waelkens, C., Lamers, H.J.G.L.M., van der Veen, W.E.C.J.* **218**, L1  
 Orbital elements for double stars of Population II. The double-line high-velocity system HD 113083  
*Lindgren, H., Ardeberg, A., Zuiderwijk, E.* **218**, 111  
*uvby- $\beta$*  photometry of high-velocity and metal-poor stars. II. Intrinsic color and metallicity calibrations  
*Schuster, W.J., Nissen, P.E.* **221**, 65
- Stars: Population III**  
 The homogeneous evolution of massive stars  
*Beech, M., Mitalas, R.* **213**, 127
- Stars: pre-main-sequence**  
 Photometric and spectroscopic study of three candidate Herbig Ae/Be stars: HD 37411, HD 100546 and HD 104237  
*Hu, J.Y., Thé, P.S., de Winter, D.* **208**, 213  
 New aspects of the variability of the probable pre-main sequence star HR 5999  
*Baade, D., Stahl, O.* **209**, 255  
 Rapid line profile-variability of the A-type shell- and possible pre-main sequence star HD 163296  
*Baade, D., Stahl, O.* **209**, 268  
 CO outflow and properties of the molecular gas around the far-infrared point source IRAS 04325-1419 in Lynds 1642  
*Liljeström, T., Mattila, K., Friberg, P.* **210**, 337  
 Optical spectroscopy and near-infrared mapping of S 106  
*Riera, A., Mampaso, A., Phillips, J.P., Vilchez, J.M.* **210**, 351  
 Spots on T Tauri stars  
*Bouvier, J., Bertout, C.* **211**, 99  
 Long- and short-term variability of the T Tauri Star RY Lupi  
*Gahm, G.F., Fischerström, C., Liseau, R., Lindroos, K.P.* **211**, 115  
 The nature of the cometary nebula 1548 C 27  
*Vilchez, J.M., Mampaso, A., Riera, A., Phillips, J.P.* **213**, 303  
 Further observations of stars associated with the Sharpless H II region Sh 2-252, and of the Herbig A0e star Sh 2-252b  
*Chavarría-K., C., Leitherer, C., de Lara, E., Sánchez, O., Zickgraf, F.-J.* **215**, 51  
 CO observations of IRAS sources in Orion and Cepheus  
*Wouterloot, J.G.A., Henkel, C., Walmsley, C.M.* **215**, 131  
 Radio continuum emission from the pre-main sequence Herbig Ae star AB Aurigae  
*Güdel, M., Benz, A.O., Catala, C., Praderie, F.* **217**, L9  
 Dust ring around  $\lambda$  Orionis  
*Zhang, C.Y., Laureijs, R.J., Chlewicki, G., Clark, F.O., Wesselius, P.R.* **218**, 231  
 Erratum: Spots on T Tauri stars  
*Bouvier, J., Bertout, C.* **218**, 337  
 The variable Herbig Ae star HR 5999. VIII. Spectroscopic observations 1975–1985 and correlations with simultaneous photometry  
*Tjin A Dje, H.R.E., Thé, P.S., Andersen, J., Nordström, B., Finkenzeller, U., Jankovics, I.* **218**, 338; **78**, 1  
 Rotating H<sup>13</sup>CO<sup>+</sup> disk and corotating H<sup>12</sup>CO<sup>+</sup> lobes in the L 1551 outflow source  
*Liljeström, T.* **219**, L19

- The pre-main-sequence binary system AK Scorpii  
*Andersen, J., Lindgren, H., Hazen, M.L., Mayor, M.* **219**, 142
- Herbig-Haro objects in flows from young stars in Orion  
*Reipurth, B.* **220**, 249
- CCD observations of bipolar nebulae. IV. S 106  
*Aspin, C., McLean, I.S., Schwarz, H.E., McCaughrean, M.J.* **221**, 100
- Active phenomena in the pre-main sequence Herbig Ae star HD163296  
*Catala, C., Simon, T., Praderie, F., Talavera, A., Thé, P.S., Tjin A Djie, H.R.E.* **221**, 273
- The Serpens sources SVS4 and FIRS1: new results from infrared images  
*Eiroa, C., Casali, M.M.* **223**, L17
- Tidal evolution of close binary stars. II. Orbital circularization of late-type binaries  
*Zahn, J.-P., Bouchet, L.* **223**, 112
- A search for H<sub>2</sub>O maser emission in the Serpens region  
*Palla, F., Giovanardi, C.* **223**, 267
- Erratum: Star counts and IRAS sources in southern dark clouds  
*Gregorio Hetem, J.C., Sanzovo, G.C., Lépine, J.R.D.* **223**, 380; **79**, 452
- The variable Herbig Ae star HR 5999. IX. Variability in the UV shell lines  
*Blondel, P.F.C., Tjin A Djie, H.R.E., Thé, P.S.* **223**, 383; **80**, 115
- Z CMa: a large-scale high velocity bipolar outflow traced by Herbig-Haro objects and a jet  
*Poetzel, R., Mundt, R., Ray, T.P.* **224**, L13
- Emission-line profiles of two T Tauri stars with weak non-photospheric continua  
*Appenzeller, I., Wagner, S.J.* **225**, 432
- High resolution spectroscopy of near main sequence B stars of blue globular clusters in the Magellanic Clouds  
*Jüttner, A., Reitermann, A., Stahl, O., Wolf, B.* **226**, 415; **81**, 93
- Stars: radio radiation of**
- A combined radio and X-ray observation of Algol  
*van den Oord, G.H.J., Kuipers, J., White, N.E., van der Hulst, J.M., Culhane, J.L.* **209**, 296
- Quiescent and flaring radio emission from the flare stars AD Leonis, EQ Pegasi, UV Ceti, Wolf 630, YY Geminorum and YZ Canis Minoris  
*Jackson, P.D., Kundt, M.R., White, S.M.* **210**, 284
- Broad-band spectrum of dMe star radio emission  
*Güdel, M., Benz, A.O.* **211**, L5
- Coordinated observations of a large impulsive flare on UV Ceti de Jager, C., Heise, J., van Genderen, A.M., Foing, B.H., Ilyin, I.V., Kilkenny, D., Angelopoulos, S., Marvridis, L., Cutispoto, G., Rodonò, M., Seeds, M.A., Yuen K.Ng., van Driel, W., Rabattu, X., Zodi, A.M., Vilas Boas, J.W.S., Scalise, E., Schaal, R.E., Kaufmann, P., Waelkens, C. **211**, 157
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. X. The 1981 October 3 flare on V711 Tauri (= HR 1099)  
*Linsky, J.L., Neff, J.E., Brown, A., Gross, B.D., Simon, T., Andrews, A.D., Rodonò, M., Feldman, P.A.* **211**, 173
- Radio continuum emission from the pre-main sequence Herbig Ae star AB Aurigae  
*Güdel, M., Benz, A.O., Catala, C., Praderie, F.* **217**, L9
- VLBI observations of  $\theta^1$  Orionis A  
*Felli, M., Massi, M., Churchwell, E.* **217**, 179
- VLA detection of radio emission from a dwarf nova  
*Benz, A.O., Güdel, M.* **218**, 137
- Broadband spectral observation of a dMe star radio flare  
*Güdel, M., Benz, A.O., Bastian, T.S., Fürst, E., Simmet, G.M., Davis, R.J.* **220**, L5
- The centimeter radio continuum from IRC+10216 and other late-type stars with mass-loss envelopes  
*Sahai, R., Claussen, M.J., Masson, C.R.* **220**, 92
- Time-variable recombination line emission in MWC 349  
*Martín-Pintado, J., Thum, C., Bachiller, R.* **222**, L9
- Carbon stars with oxygen-rich circumstellar envelopes?  
*Zuckerman, B., Maddalena, R.J.* **223**, L20
- Carbon stars with oxygen-rich circumstellar envelopes!  
*de Jong, T.* **223**, L23
- Stars: rotation of**
- Anisotropic neutrino emission from rotating protoneutron stars  
*Janka, H.-T., Mönchmeyer, R.* **209**, L5
- "Normal" main sequence A0 stars of low rotational velocity  
*Ramella, M., Gerbaldi, M., Faraggiana, R., Böhm, C.* **209**, 233
- Blue stragglers and the binary hypothesis  
*Manteiga, M., Pickles, A.J., Martinez Roger, C.* **210**, 66
- Excess calcium emission flux and the Rossby number  
*Stepień, K.* **210**, 273
- Asynchronous rotation in close binary systems with circular orbits  
*Habets, G.M.H.J., Zwaan, C.* **211**, 56
- Spots on T Tauri stars  
*Bowler, J., Bertout, C.* **211**, 99
- Tidal effects in rotating close binaries  
*Rocca, A.* **213**, 114
- Effects of stellar rotation on the Geneva photometric system  
*Hauck, B., Slettebak, A.* **214**, 153
- Long-lived active longitudes on the spotted RS CVn star  $\sigma$  Geminorum  
*Olah, K., Panov, K.P., Pettersen, B.R., Valtaoja, E., Valtaoja, L.* **218**, 192
- Erratum: Spots on T Tauri stars  
*Bowler, J., Bertout, C.* **218**, 337
- Radii and space orientation of the rotational axes of Ap stars  
*Stepień, K.* **220**, 105
- The angular momentum loss for late-type stars  
*van 't Veer, F., Maceroni, C.* **220**, 128
- A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. II. Results and discussion  
*Baade, D.* **222**, 200
- A numerical survey of relativistic rotating neutron star structures using the Hartle-Thorne formalism  
*Thomas, J.M.* **223**, 375; **79**, 189
- A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. I. Observations and measurements  
*Baade, D.* **223**, 380; **79**, 423
- Hydrostatic post bounce configurations of collapsed rotating iron cores: neutrino emission  
*Janka, H.-T., Mönchmeyer, R.* **226**, 69
- The moment of inertia of main sequence stars  
*Claret, A., Giménez, A.* **226**, 415; **81**, 37
- Stars: RR Lyr**
- Photometric analysis of RR Lyrae stars. I. The multiperiodic ST CVn  
*Peniche, R., Gomez, T., Parrao, L., Peña, J.H.* **209**, 59

- The Baade-Wesselink method applied to field RR Lyrae stars. II. SW Andromedae, SW Draconis, and SS Fornacis  
*Cacciari, C., Clementini, G., Prevot, L., Buser, R.* **209**, 141
- The Baade-Wesselink method applied to field RR Lyrae stars. III. YZ Capricorni, RV Phoenixis, and V440 Sagittarii  
*Cacciari, C., Clementini, G., Buser, R.* **209**, 154
- The Oosterhoff dichotomy revisited. II. Pulsational constraints on the luminosity of RR Lyrae variables in OoII and OoI globular clusters  
*Caputo, F., Castellani, V., Tornambé, A.* **222**, 121
- Shock waves of large amplitude in the atmospheres of RR Lyrae stars?  
*Gillet, D., Burki, G., Crowe, R.A.* **225**, 445
- Studies of Cepheid-type variability. VI. Two- and three-mode resonances in Cepheid models  
*Petersen, J.O.* **226**, 151
- Stars: runaway**
- Are massive X-ray binaries runaway stars?  
*van Oijen, J.G.J.* **217**, 115
- Peculiar and normal early-type stars in the galactic halo  
*Conlon, E.S., Brown, P.J.F., Dufton, P.L., Keenan, F.P.* **224**, 65
- Stars: structure of**
- The structure equations of contact binaries and the light curve paradox  
*Kähler, H.* **209**, 67
- Radiation-hydrodynamic equations for stellar oscillations  
*Da-run Xiong* **209**, 126
- Investigation of a criterion for the evolution to red giants  
*Weiss, A.* **209**, 135
- Standard models of Wolf-Rayet stars  
*Langer, N.* **210**, 93
- Grids of evolutionary models from 0.85 to 120  $M_{\odot}$ : observational tests and the mass limits  
*Maeder, A., Meynet, G.* **210**, 155
- Neutron capture nucleosynthesis and the evolution of 15 and  $M_{\odot}$  stars. I. The core helium burning phase  
*Langer, N., Arcoragi, J.-P., Arnould, M.* **210**, 187
- Evolution of the surface abundance of carbon in mass-exchanging binaries  
*De Greve, J.P., Cugier, H.* **211**, 356
- Integral constraints on convective overshooting  
*Roxburgh, I.W.* **211**, 361
- The homogeneous evolution of massive stars  
*Beech, M., Mitalas, R.* **213**, 127
- Numerical simulations of nonlocal convection  
*Da-run Xiong* **213**, 176
- Evolutionary models for detached close binaries: the systems V 539 Arae and QX Carinae  
*De Greve, J.P.* **213**, 195
- Life and death of cosmions in stars  
*Bouquet, A., Salati, P.* **217**, 270
- Rotating  $H^{13}CO^+$  disk and corotating  $H^{12}CO^+$  lobes in the L 1551 outflow source  
*Liljeström, T.* **219**, L19
- Globular clusters in the Large Magellanic Cloud: NGC 1866, a test for convective overshoot  
*Chiosi, C., Bertelli, G., Meylan, G., Ortolani, S.* **219**, 167
- Tidal evolution of close binary stars. I. Revisiting the theory of the equilibrium tide  
*Zahn, J.-P.* **220**, 112
- Mass-dependent mass loss rates of Wolf-Rayet stars  
*Langer, N.* **220**, 135
- Herbig-Haro objects in flows from young stars in Orion  
*Reipurth, B.* **220**, 249
- The height dependence of vertical and horizontal velocities attributed to the convective overshoot in the solar atmosphere  
*Nesis, A., Mattig, W.* **221**, 130
- Weakly interacting massive particles and stellar structure  
*Bouquet, A., Kaplan, J., Martin, F.* **222**, 103
- Gamma-ray lines from radioactive nuclei produced in hydrostatic stellar burning phases  
*Prantzos, N.* **223**, 136
- Blue supergiant supernova progenitors  
*Langer, N., El Eid, M.F., Baraffe, I.* **224**, L17
- Gravity-darkening for stars with a Roche lobe filling convective envelopes in close binary systems  
*Sarna, M.J.* **224**, 98
- Dynamic stabilization of unstable gravity modes by magnetic fields in non-uniform and compressible plasmas  
*Hermans, D., Goossens, M.* **225**, 569
- Studies of Cepheid-type variability. VI. Two- and three-mode resonances in Cepheid models  
*Petersen, J.O.* **226**, 151
- A detailed grid of evolutionary stellar models during hydrogen burning phases  
*Claret, A., Giménez, A.* **226**, 415; **81**, 1
- The moment of inertia of main sequence stars  
*Claret, A., Giménez, A.* **226**, 415; **81**, 37
- Stars: subdwarf**
- PG 1550+131: a short periodic precataclysmic binary with very deep eclipses  
*Haefner, R.* **213**, L15
- An empirical colour- $T_{\text{eff}}$  calibration for G and K dwarf and subdwarf stars  
*Arribas, S., Martinez Roger, C.* **215**, 305
- Orbital elements for double stars of Population II. The double-line high-velocity system HD 113083  
*Lindgren, H., Ardeberg, A., Zuiderwijk, E.* **218**, 111
- Non-LTE analysis of extremely helium-rich stars. I. The hot sdO stars LSE 153, 259 and 263  
*Husfeld, D., Butler, K., Heber, U., Drilling, J.S.* **222**, 150
- Stars: supergiant**
- The UU Herculis star HD 161796  
*Mantegazza, L., Antonello, E., Poretti, E.* **208**, 91
- The maximum amplitude of the optical micro-variations of massive O-F type stars (or  $\alpha$  Cygni variables, including LBV's or S Dor variables) across the HR diagram  
*van Genderen, A.M.* **208**, 135
- A study of ultraviolet spectra of  $\zeta$  Aurigae/VV Cephei systems. XI. 22 Vulpeculae: IUE observations of its extended chromosphere and wind with spatial resolution  
*Schröder, K.-P., Reimers, D.* **208**, 223
- Effect of diverging magnetic fields on mass loss in late-type giant stars  
*Jatenco-Pereira, V., Opher, R.* **209**, 327
- Chemical evolution of the Magellanic Clouds. I. Metal abundance in three young supergiants of the Small Cloud  
*Spite, F., Spite, M., François, P.* **210**, 25
- The polarized dust envelope around the red supergiant  $\mu$  Cephei  
*Le Borgne, J.F., Maun, N.* **210**, 198



- Strömgren photometry of late-type supergiants in the Small Magellanic Cloud  
*Richler, T.* **211**, 199
- Circumstellar dust around HR 4049: a critical test for theories of interstellar dust  
*Waters, L.B.F.M., Lamers, H.J.G.L.M., Snow, T.P., Mathlener, E., Trams, N.R., van Hoof, P.A.M., Waelkens, C., Seab, C.G., Stanga, R.* **211**, 208
- The ultra-violet spectrum of the peculiar early-type supergiant, HD 157038  
*Dufton, P.L., Lennon, D.J.* **211**, 397
- An investigation of the micro variations of highly luminous OBA-type stars ( $\alpha$  Cygni variables). VIII. A study of the periodicities in the radial velocity and light variations of the nitrogen-rich supergiant HD 105056 (ON 9.7 Iae)  
*van Genderen, A.M., Breukers, R.J.L.H., Houtekamer, P., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M.* **213**, 161
- Distribution and luminosity function of OB stars in M31  
*Berkhuijsen, E.M., Humphreys, R.M.* **214**, 68
- A photometric study of F-type stars of high galactic latitude  
*Arellano Ferro, A., Giridhar, S., Chavez, M., Parrao, L.* **214**, 123
- The structure of the Small Magellanic Cloud  
*Martin, N., Maurice, E., Lequeux, J.* **215**, 219
- Mass loss rate and atmospheric turbulence of the B2 hypergiant HD 80077  
*Carpay, J., de Jager, C., Nieuwenhuijzen, H., Moffat, A.* **216**, 143
- The distance and evolutionary phase of the Luminous Blue Variable AG Carinae  
*Humphreys, R.M., Lamers, H.J.G.L.M., Hoekzema, N., Casatella, A.* **218**, L17
- An analysis of high resolution spectra of the B[e]-stars CPD-52°9243 and MWC 300  
*Winkler, H., Wolf, B.* **219**, 151
- The spectrograms of Sanduleak -69°202, precursor to Supernova 1987A in the Large Magellanic Cloud  
*Walborn, N.R., Prévot, M.-L., Prévot, L., Wamsteker, W., González, R., Gilmozzi, R., Fitzpatrick, E.L.* **219**, 229
- BVR photoelectric photometry of late-type stars and a compilation of other data in the Small Magellanic Cloud  
*Maurice, E., Bouchet, P., Martin, N.* **219**, 365; **78**, 445
- S 18: a new B[e] supergiant in the Small Magellanic Cloud with evidence for an excretion disk  
*Zickgraf, F.-J., Wolf, B., Stahl, O., Humphreys, R.M.* **220**, 206
- Chemical evolution of the Magellanic Clouds. III. Oxygen and carbon abundances in a few F supergiants of the Small Cloud  
*Spite, M., Barbuy, B., Spite, F.* **222**, 35
- Emission-line stars in the Magellanic Clouds: infrared spectroscopy of B[e] and Ofpe/WN9 stars  
*McGregor, P.J., Hyland, A.R., McGinn, M.T.* **223**, 237
- Light variations of massive stars ( $\alpha$  Cygni variables). IX  
*van Genderen, A.M., Bovenchen, H., Engelsman, E.C., Goudfrooy, P., van Haarlem, M.P., Hartmann, D., Latour, H.J., Ng, Y.K., Prein, J.J., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M., Tjdhof, W.* **223**, 376; **79**, 263
- Light variations of massive stars ( $\alpha$  Cygni variables). X. The F type supergiants G266 = HDE271182 = R92 and G322 = HDE269612 in the LMC  
*van Genderen, A.M., Hadiyanto Nitihardjo, G.* **223**, 379; **79**, 401
- Blue supergiant supernova progenitors  
*Langer, N., El Eid, M.F., Baraffe, I.* **224**, L17
- Transverse motion, rotation and velocity dispersions of the Large Magellanic Cloud  
*Prévot, L., Rousseau, J., Martin, N.* **225**, 303
- Variations in the chromospheric Ca II lines of  $\alpha$  Orionis  
*Toussaint, F., Reimers, D.* **226**, L17
- Stars: supernovae**; see Supernovae and supernova remnants
- Stars: T Tau**; see Stars: pre-main-sequence
- Stars: temperatures of**
- Infrared observations and the fundamental properties of white dwarf stars  
*Leggett, S.K.* **208**, 141
- Magnetic fields in late-type dwarfs: Preliminary results from a multiline approach  
*Mathys, G., Solanki, S.K.* **208**, 189
- Spectral analysis of 30 Wolf-Rayet stars  
*Schmutz, W., Hamann, W.-R., Wessolowski, U.* **210**, 236
- Colors of extended static model photospheres of M giants  
*Bessell, M.S., Brett, J.M., Scholz, M., Wood, P.R.* **213**, 520; **77**, 1
- An empirical colour- $T_{\text{eff}}$  calibration for G and K dwarf and subdwarf stars  
*Arribas, S., Martinez Roger, C.* **215**, 305
- uvby $\beta$  photometry of peculiar B and A stars, discovered at Abastumani  
*Alania, I.F., Abuladze, O.P., West, R.M.* **215**, 411; **77**, 333
- Discovery of a new extremely hot DA white dwarf close to the open cluster NGC 6405  
*Koester, D., Reimers, D.* **217**, L1
- Effective temperatures of Ap stars  
*Stępień, K., Dominiczak, R.* **219**, 197
- Zanstra temperatures of the central stars of southern planetary nebulae  
*Gleizes, F., Acker, A., Stenholm, B.* **222**, 237
- Empirical temperature calibrations for early-type stars  
*Gulati, R.K., Malagnini, M.L., Morossi, C.* **223**, 382; **80**, 73
- A detailed grid of evolutionary stellar models during hydrogen burning phases  
*Claret, A., Giménez, A.* **226**, 415; **81**, 1
- The energy-balance temperature of central stars of galactic planetary nebulae  
*Preite-Martinez, A., Acker, A., Köppen, J., Stenholm, B.* **226**, 421; **81**, 309
- Stars: variable**
- The UU Herculis star HD 161796  
*Mantegazza, L., Antonello, E., Poretti, E.* **208**, 91
- HD 112481 and HD 145794, two  $\beta$  Cephei stars  
*Waelkens, C., Heynderickx, D.* **208**, 129
- The maximum amplitude of the optical micro-variations of massive O-F type stars (or  $\alpha$  Cygni variables, including LBVs or SDor variables) across the HR diagram  
*van Genderen, A.M.* **208**, 135
- High resolution IUE observations of the flare star AD Leonis: implications for the Mg II Wilson-Bappu effect  
*Ambruster, C.W., Pettersen, B.R., Sundland, S.R.* **208**, 198
- Photometric analysis of RR Lyrae stars. I. The multiperiodic ST CVn  
*Peniche, R., Gomez, T., Parrao, L., Peña, J.H.* **209**, 59

- The Baade-Wesselink method applied to field RR Lyrae stars. II. SW Andromedae, SW Draconis, and SS Fornacis  
*Cacciari, C., Clementini, G., Prevot, L., Buser, R.* **209**, 141
- The Baade-Wesselink method applied to field RR Lyrae stars. III. YZ Capricorni, RV Phoenixis, and V440 Sagittarii  
*Cacciari, C., Clementini, G., Buser, R.* **209**, 154
- IRAS Low Resolution Spectrograph spectral class and M and S Miras  
*Vardya, M.S.* **209**, 165
- New aspects of the variability of the probable pre-main sequence star HR 5999  
*Baade, D., Stahl, O.* **209**, 255
- Optical studies of transient low-mass X-ray binaries in quiescence. I. Centaurus X-4: orbital period, light curve, spectrum and models for the system  
*Chevalier, C., Ilovaisky, S.A., van Paradijs, J., Pedersen, H., van der Klis, M.* **210**, 114
- The first decade of envelope formation of 59 Cygni in the far UV and optical regions. II  
*Doazan, V., Barylak, M., Rusconi, L., Sedmak, G., Thomas, R.N., Bourdonneau, B.* **210**, 249
- Phase variations of 88 Herculis: Do the UV observations confirm a connection between these variations and the changes of the photospheric parameters of the underlying star?  
*Zorec, J., Höflich, P., Ditan, L.* **210**, 279
- Investigation of micro-flaring and secular and quasi-periodic variations in dMe flare stars. I. Suspected ultra-short "waves" in the dM2-3e star V1285 Aquilae  
*Andrews, A.D.* **210**, 303
- Long- and short-term variability of the T Tauri Star RY Lupi  
*Gahm, G.F., Fischerström, C., Liseau, R., Lindroos, K.P.* **211**, 115
- Synthetic optical and ultraviolet spectra of stationary accretion disks  
*la Dous, C.* **211**, 131
- An investigation of the micro variations of highly luminous OBA-type stars ( $\alpha$  Cygni variables). VIII. A study of the periodicities in the radial velocity and light variations of the nitrogen-rich supergiant HD 105056 (ON 9.7 Iae)  
*van Genderen, A.M., Breukers, R.J.L.H., Houtekamer, P., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M.* **213**, 161
- Multiple close frequencies of the Delta Scuti star  $\theta^2$  Tauri. II. The second multisite campaign  
*Breger, M., Garrido, R., Huang Lin, Jiang Shi-yang, Guo Zhi-he, Frueh, M., Paparo, M.* **214**, 209
- Investigation of micro-flaring and secular and quasi-periodic variations in the dMe flare stars. II. "Time signatures" of micro-variability in V 1285 Aquilae, V 645 Centauri, V 1054 Ophiuchi and AU Microscopii  
*Andrews, A.D.* **214**, 220
- Linear polarization of Babcock's star  
*Breger, M., Weiss, W.W., Wills, B.J.* **215**, 48
- Stellar photometric stability. I. The open clusters Melotte 105, NGC 2660 and NGC 4755  
*Frandsen, S., Dreyer, P., Kjeldsen, H.* **215**, 287
- Shock phenomena in the atmosphere of the RV Tauri star, R Scuti  
*Gillet, D., Duquennoy, A., Bouchet, P., Gouiffes, C.* **215**, 316
- Ultraviolet P-Cygni profile variations in HD 50896  
*Willis, A.J., Howarth, I.D., Smith, L.J., Garmany, C.D., Conti, P.S.* **215**, 410; **77**, 269
- Improved orbital parameters for the binary Cepheid T Monocerotis  
*Gieren, W.P.* **216**, 135
- Optical one second quasi-periodic oscillations in VV Puppis  
*Larsson, S.* **217**, 146
- Lightcurves of the Algol-variable U CrB in the UPS photometric system  
*van Gent, R.H.* **217**, 393; **77**, 471
- Orbital double stars with variable components (text in French)  
*Baize, P., Petit, M.* **217**, 394; **77**, 497
- Long-lived active longitudes on the spotted RS CVn star  $\sigma$  Geminorum  
*Olah, K., Panov, K.P., Pettersen, B.R., Valtaoja, E., Valtaoja, L.* **218**, 192
- The variable Herbig Ae star HR 5999. VIII. Spectroscopic observations 1975-1985 and correlations with simultaneous photometry  
*Tjin A Djie, H.R.E., Thé, P.S., Andersen, J., Nordström, B., Finkenzeller, U., Jankovics, I.* **218**, 338; **78**, 1
- Observations on the variability of linear polarization in late-type dwarf stars  
*Huovelin, J., Linnaluoto, S., Tuominen, I., Virtanen, H.* **218**, 340; **78**, 129
- Spectroscopy of poorly known northern dwarf novae. Part I  
*Bruch, A.* **218**, 340; **78**, 145
- The pre-main-sequence binary system AK Scorpii  
*Andersen, J., Lindgren, H., Hazen, M.L., Mayor, M.* **219**, 142
- Spectral energy distributions of Be stars. III. Envelope models derived from new measurements for 17 stars  
*Dachs, J., Poetzel, R., Kaiser, D.* **219**, 365; **78**, 487
- A spectroscopic study of the dwarf nova CN Orionis  
*Barrera, L.H., Vogt, N.* **220**, 99
- The magnetic field and rotation period of the Ap star HD 4778  
*Bohlender, D.A.* **220**, 215
- The flare activity of the red dwarf binary Gliese 277 AB  
*Hawley, S.L., Panov, K.P., Pettersen, B.R., Sundland, S.R.* **220**, 218
- The new long-period Cepheid G458 = HDE 270100 in the Large Magellanic Cloud  
*van Genderen, A.M., Hadiyanto Nitiwardjo, G.* **221**, 230
- Spectral energy distributions of Be stars. II. Determination of Be star parameters by comparison between measured and model spectra  
*Kaiser, D.* **222**, 187
- The Kuwano-Honda's peculiar object (PU Vulpeculae) in 1983-1986  
*Belyakina, T.S., Bondar, N.I., Chochol, D., Chuvaev, K.K., Efimov, Y.S., Gershberg, R.E., Grygar, J., Hric, L., Krasnobabisev, V.I., Pirola, V., Poutanen, M., Savanov, I.S., Huovelin, J., Tuominen, I., Shakhovskaya, N.I., Shakhovskoy, N.M., Shevnaev, V.I., Shcherbakov, A.G.* **223**, 119
- Photometric variations of 46 Eridani and 210 G Eridani  
*Manfroid, J., Renson, P.* **223**, 187
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XIII. IUE spectroscopy and photometry of II Pegasi during September 1986  
*Doyle, J.G., Butler, C.J., Byrne, P.B., Rodonò, M., Swank, J., Fowles, W.* **223**, 219
- Five-colour optical photometry of AE Aquarii  
*van Paradijs, J., Kraakman, H., van Amerongen, S.* **223**, 375; **79**, 205

- Light variations of massive stars ( $\alpha$  Cygni variables). IX  
*van Genderen, A.M., Bovenschen, H., Engelsman, E.C., Goudfrooy, P., van Haarlem, M.P., Hartmann, D., Latour, H.J., Ng, Y.K., Prein, J.J., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M., Tjardhof, W.* **223**, 376; **79**, 263
- Erratum: Spectroscopy of poorly known northern dwarf novae. Part I*  
*Bruch, A.* **223**, 380; **79**, 451
- Strömgren photometry of the variable Wolf-Rayet star HD 86161 = WR 16  
*van Genderen, A.M., van der Hucht, K.A., Bakker, P.R.* **224**, 125
- Ultraviolet flares on II Pegasi  
*Doyle, J.G., Byrne, P.B., van den Oord, G.H.J.* **224**, 153
- Towards a reconciliation of Cepheid masses  
*Gieren, W.P.* **225**, 381
- Possible optical transient in Triangulum and its relation to the  $\gamma$ -ray burst sources  
*Hudec, R., Peresty, R., Meinunger, L., Wenzel, W., Motch, C.* **225**, 411
- Studies of Cepheid-type variability. VI. Two- and three-mode resonances in Cepheid models  
*Petersen, J.O.* **226**, 151
- IUE observations of variability in the WN6 star HD 192163  
*St-Louis, N., Smith, L.J., Stevens, I.R., Willis, A.J., Garmany, C.D., Conti, P.S.* **226**, 249
- Intensive photometry of southern Be variables. I. Winter objects  
*Cuyper, J., Balona, L.A., Marang, F.* **226**, 418; **81**, 151
- 36 revisited variable stars around Nova Cygni 1970  
*Margoni, R., Stagni, R., Munari, U., Marton, S.* **226**, 421; **81**, 393
- Stars: white dwarf**
- Models of head-on collisions between a white dwarf and a low-mass main-sequence star  
*Różyczka, M., Yorke, H.W., Bodenheimer, P., Müller, E., Hashimoto, M.* **208**, 69
- Infrared observations and the fundamental properties of white dwarf stars  
*Leggett, S.K.* **208**, 141
- Tidal pinching of white dwarfs  
*Luminet, J.-P., Pichon, B.* **209**, 103
- The coalescence of white dwarfs and type I supernovae  
*Mochkovitch, R., Livio, M.* **209**, 111
- The presence of carbon in DZ star atmospheres  
*Weidemann, V., Koester, D.* **210**, 311
- PG 1550+131: a short periodic precataclysmic binary with very deep eclipses  
*Haefner, R.* **213**, L15
- Distances and mass distribution of central stars of planetary nebulae  
*Weidemann, V.* **213**, 155
- Subharmonics in the variable white dwarf G 191-16  
*Vauclair, G., Goupil, M.J., Baglin, A., Auvergne, M., Chevreton, M.* **215**, L17
- Discovery of a new extremely hot DA white dwarf close to the open cluster NGC 6405  
*Koester, D., Reimers, D.* **217**, L1
- Optical one second quasi-periodic oscillations in VV Puppis  
*Larsson, S.* **217**, 146
- Spectroscopic identification of white dwarfs in galactic clusters. V. NGC 3532  
*Reimers, D., Koester, D.* **218**, 118
- Detection of Lyman  $\alpha$  in the spectrum of a white dwarf with helium atmosphere  
*Koester, D., Weidemann, V.* **219**, 276
- Simultaneous *UBVRI* photometry of Nova DQ Herculis (1934)  
*Schoembs, R., Rebhan, H.* **224**, 42
- White dwarf luminosity functions calculated from models of galactic evolution and the age of the galactic disk  
*Yuan, J.W.* **224**, 108
- Stars: winds; see Stars: mass loss**
- Stars: Wolf-Rayet**
- Standard models of Wolf-Rayet stars  
*Langer, N.* **210**, 93
- Spectral analysis of 30 Wolf-Rayet stars  
*Schmutz, W., Hamann, W.-R., Wessolowski, U.* **210**, 236
- The bolometric corrections and the  $M/L$  relation for Wolf-Rayet stars  
*Smith, L.F., Maeder, A.* **211**, 71
- The homogeneous evolution of massive stars  
*Beech, M., Mitalas, R.* **213**, 127
- Ultraviolet P-Cygni profile variations in HD 50896  
*Willis, A.J., Howarth, I.D., Smith, L.J., Garmany, C.D., Conti, P.S.* **215**, 410; **77**, 269
- Spectrophotometry of faint Wolf-Rayet stars  
*Lundström, I., Stenholm, B.* **218**, 199
- Mass-dependent mass loss rates of Wolf-Rayet stars  
*Langer, N.* **220**, 135
- Observed and synthesized populations of Wolf-Rayet stars: their evolution and the influence of metallicity  
*Arnault, Ph., Kunth, D., Schild, H.* **224**, 73
- Evolution of massive binaries including the effect of convective core overshooting  
*Vanbeveren, D.* **224**, 93
- Strömgren photometry of the variable Wolf-Rayet star HD 86161 = WR 16  
*van Genderen, A.M., van der Hucht, K.A., Bakker, P.R.* **224**, 125
- The number of evolved early-type close binaries in the Galaxy  
*Meurs, E.J.A., van den Heuvel, E.P.J.* **226**, 88
- Spectroscopic variations of the V 444 Cyg system  
*Acker, A., Prévot, M.-L., Prévot, L.* **226**, 137
- IUE observations of variability in the WN6 star HD 192163  
*St-Louis, N., Smith, L.J., Stevens, I.R., Willis, A.J., Garmany, C.D., Conti, P.S.* **226**, 249
- The Wolf-Rayet nebula NGC 3199 – an interstellar snow plough?  
*Dyson, J.E., Ghanbari, J.* **226**, 270
- Near infrared spectra of galactic and Magellanic Wolf-Rayet stars  
*Vreux, J.M., Dennefeld, M., Andritat, Y., Rochowicz, K.* **226**, 421; **81**, 353
- Submillimetre radiation; see Infrared radiation**
- Sun (the): abundances**
- Revision of the absolute scale of the Oxford Ti I oscillator strengths and the solar titanium abundance  
*Grevesse, N., Blackwell, D.E., Petford, A.D.* **208**, 157
- An improved solar lead abundance  
*Youssef, N.H., Khalil, N.M.* **208**, 271
- Accurate solar photospheric abundances: a comparison with meteorite data  
*Booth, A.J.* **208**, 287

Lifetimes and transition probabilities in V II and the solar abundance of vanadium

Biémont, E., Grevesse, N., Faires, L.M., Marsden, G., Lawler, J.E., Whaling, W. **209**, 391

Photospheric abundance of samarium deduced from two new ionic lines

Youssef, N.H., Khalil, N.M. **215**, 165

Solar photospheric abundance of scandium and vanadium deduced from their ions

Youssef, N.H., Amer, M.A. **220**, 281

Lifetimes in Sm II and the solar abundance of samarium

Biémont, E., Grevesse, N., Hannaford, P., Lowe, R.M. **222**, 307

Supply of fractionated gases to the corona

von Steiger, R., Geiss, J. **225**, 222

### Sun (the): activity of

Comments on coronal mass ejection onset studies

Harrison, R.A., Sime, D.G. **208**, 274

A numerical model for a cosmic ray modulation barrier in the outer heliosphere

Potgieter, M.S., Le Roux, J.A. **209**, 406

Type III radio bursts in a fibrous corona

Roelof, E.C., Pick, M. **210**, 417

A comparison of solar and stellar ultraviolet spectra obtained with SKYLAB and IUE

Cappelli, A., Cerruti-Sola, M., Cheng, C.C., Pallavicini, R. **213**, 226

Pole-equator-difference of the size of the chromospheric Ca II-K-network in quiet and active solar regions

Münzer, H., Hansmeier, A., Schröter, E.H., Wöhl, H. **213**, 431

Solar cycle variations of coronal structures

Loucif, M.L., Koutchmy, S. **213**, 521; 77, 45

Energy storage in solar loops by footpoint motions

Zappalà, R.A., Zuccarello, F. **214**, 369

Determination of solenoidal horizontal velocities in solar active regions

Berton, R. **215**, 168

Characteristics of type III bursts in the solar wind from simultaneous observations on board ISEE-3 and Voyager

Lecacheux, A., Steinberg, J.-L., Hoang, S., Dulk, G.A. **217**, 237

The generation of MHD waves by forced turbulence in a weakly magnetized fluid

Rosner, R., Musielak, Z.E. **219**, L27

Multi-spectral analysis of total solar irradiance variations

Fröhlich, C., Pap, J. **220**, 272

On the generation of the net circular polarization observed in solar faculae

Sánchez-Almeida, J., Collados, M., del Toro Iniesta, J.C. **222**, 311

The origin and the diagnostic capabilities of the Stokes *V* asymmetry observed in solar faculae and the network

Solanki, S.K. **224**, 225

Quasi-periodicities in solar type II burst groups

Mangeney, A., Pick, M. **224**, 242

Solar cycle induced variations of the low *l* solar acoustic spectrum

Pallé, P.L., Régulo, C., Roca Cortés, T. **224**, 253

Comparison of H $\alpha$  absorbing features with soft X-ray images at the onset of solar flares

Mouradian, Z., Martres, M.-J., Soru-Escout, I., Simnett, G.M. **224**, 267

Simultaneous rapid X-ray and optical intensity fluctuations from a small part of a flaring active region

Simnett, G.M., Mouradian, Z., Martres, M.-J., Soru-Escout, I. **224**, 284

### Sun (the): atmosphere of

Accurate solar photospheric abundances: a comparison with meteorite data

Booth, A.J. **208**, 287

Solar oscillations as seen in the Na I and K I absorption lines

Isaak, G.R., McLeod, C.P., Pallé, P.L., van der Raay, H.B., Roca Cortés, T. **208**, 297

Overstability of magnetic flux tubes in the Eddington approximation

Massaglia, S., Bodo, G., Rossi, P. **209**, 399

Dynamics of magnetic flux concentrations: the second-order thin flux tube approximation

Ferriz-Mas, A., Schüssler, M., Anton, V. **210**, 425

Operator perturbation method for multi-level line transfer with partial redistribution

Uitenbroek, H. **213**, 360

A numerical simulation study of solar granular convection in cells of different horizontal dimension

Steffen, M., Ludwig, H.-G., Krüß, A. **213**, 371

Dynamics of the solar atmosphere. I. Spatio-temporal analysis of waves in the quiet solar atmosphere

Deubner, F.-L., Fleck, B. **213**, 423

Observations of solar p-modes with  $l \leq 5$

Pallé, P.L., Pérez Hernández, F., Roca Cortés, T., Isaak, G.R. **216**, 253

Comments on the photospheric dynamo model of Hénoux and Somov

Melrose, D.B., Khan, J.I. **219**, 308

Resonant absorption of magnetogravity waves in an isothermal atmosphere permeated by a nearly horizontal magnetic field in the presence of radiative exchange

Zhukov, V.I. **222**, 293

Stationary siphon flows in thin magnetic flux tubes

Degenhardt, D. **222**, 297

Non-linear dynamos. I. One-dimensional model of a thin layer dynamo

Schmitt, D., Schüssler, M. **223**, 343

Dynamics of the solar atmosphere. II. Standing waves in the solar chromosphere

Fleck, B., Deubner, F.-L. **224**, 245

Density diagnostic and inhomogeneous plasmas. I. Isothermal plasmas

Almleaky, Y.M., Brown, J.C., Sweet, P.A. **224**, 328

A semi-empirical model of sunspot penumbra

Ding, M.D., Fang, C. **225**, 204

### Sun (the): bursts

Relative timing of solar prompt  $\gamma$ -ray line and X-ray emission expected from a trap plus precipitation model for protons and electrons

Hulot, E., Vilmer, N., Trotter, G. **213**, 383



Characteristics of type III bursts in the solar wind from simultaneous observations on board ISEE-3 and Voyager

*Lecacheux, A., Steinberg, J.-L., Hoang, S., Dulk, G.A.* **217**, 237

Model interpretation of type III radio burst characteristics. II. Temporal aspects

*Reiner, M.J., Stone, R.G.* **217**, 251

Quasi-periodicities in solar type II burst groups

*Mangeney, A., Pick, M.* **224**, 242

### Sun (the): chromosphere of

Oscillations of the Sun's chromosphere. V. Importance of network dynamics for chromospheric heating

*von Uexküll, M., Kneer, F., Malherbe, J.M., Mein, P.* **208**, 290

A comparison of solar and stellar ultraviolet spectra obtained with SKYLAB and IUE

*Cappelli, A., Cerruti-Sola, M., Cheng, C.C., Pallavicini, R.* **213**, 226

Dynamics of a filament at the boundary of a spot region with magnetic shear

*Schmieder, B., Raadu, M.A., Démoulin, P., Dere, K.P.* **213**, 402

Pole-equator-difference of the size of the chromospheric Ca II-K-network in quiet and active solar regions

*Münzer, H., Hanslmeier, A., Schröter, E.H., Wöhl, H.* **213**, 431

Dynamics of the solar atmosphere. II. Standing waves in the solar chromosphere

*Fleck, B., Deubner, F.-L.* **224**, 245

Supply of fractionated gases to the corona

*von Steiger, R., Geiss, J.* **225**, 222

### Sun (the): corona of

Comments on coronal mass ejection onset studies

*Harrison, R.A., Sime, D.G.* **208**, 274

Role of rigid rotation in the sudden disappearance of solar filaments

*Mouradian, Z., Soru-Escaut, I.* **210**, 410

Type III radio bursts in a fibrous corona

*Roelof, E.C., Pick, M.* **210**, 417

Solar cycle variations of coronal structures

*Loucif, M.L., Koutchmy, S.* **213**, 521; **77**, 45

Model interpretation of type III radio burst characteristics. II. Temporal aspects

*Reiner, M.J., Stone, R.G.* **217**, 251

Coronal Mg<sup>+</sup>: collisional excitation of the 2s-2p multiplet

*Burgess, A., Mason, H.E., Tully, J.A.* **217**, 319

A generalization of the Woltjer minimum-energy principle

*Dixon, A.M., Berger, M.A., Browning, P.K., Priest, E.R.* **225**, 156

### Sun (the): cosmic rays

A numerical model for a cosmic ray modulation barrier in the outer heliosphere

*Potgieter, M.S., Le Roux, J.A.* **209**, 406

### Sun (the): faculae

The internal magnetic field distribution and the diameters of solar magnetic elements

*Zayer, I., Solanki, S.K., Stenflo, J.O.* **211**, 463

On the generation of the net circular polarization observed in solar faculae

*Sánchez-Almeida, J., Collados, M., del Toro Iniesta, J.C.* **222**, 311

The origin and the diagnostic capabilities of the Stokes *V* asymmetry observed in solar faculae and the network

*Solanki, S.K.* **224**, 225

### Sun (the): flares

Comments on coronal mass ejection onset studies

*Harrison, R.A., Sime, D.G.* **208**, 274

Langmuir wave generation by thick target electron beams in solar flares: the effects of density variations and reverse currents

*McClements, K.G.* **208**, 279

Coordinated observations of a large impulsive flare on UV Ceti

*de Jager, C., Heise, J., van Genderen, A.M., Foing, B.H., Ilyin, I.V., Kilkenny, D., Avgoloupis, S., Marvidis, L., Cutispoto, G., Rodonò, M., Seeds, M.A., Yuen K.Ng., van Driel, W., Rabattu, X., Zodi, A.M., Vilas Boas, J.W.S., Scalise, E., Schaal, R.E., Kaufmann, P., Waelkens, C.* **211**, 157

Relative timing of solar prompt  $\gamma$ -ray line and X-ray emission expected from a trap plus precipitation model for protons and electrons

*Hulot, E., Vilmer, N., Trotter, G.* **213**, 383

Implications of the solar flare  $\gamma$ -ray limb-brightening observations for particle acceleration and the flare magnetic environment. I. Approximate, analytical treatment

*MacKinnon, A.L., Brown, J.C.* **215**, 371

Comments on the photospheric dynamo model of Hénoux and Somov

*Melrose, D.B., Khan, J.I.* **219**, 308

A relation between Balmer and soft X-ray emission in flares

*Haisch, B.M.* **219**, 317

Stochastic acceleration of solar protons in the transrelativistic region

*Steinacker, J., Schlickeiser, R.* **224**, 259

Comparison of H $\alpha$  absorbing features with soft X-ray images at the onset of solar flares

*Mouradian, Z., Martres, M.-J., Soru-Escaut, I., Simnett, G.M.* **224**, 267

Simultaneous rapid X-ray and optical intensity fluctuations from a small part of a flaring active region

*Simnett, G.M., Mouradian, Z., Martres, M.-J., Soru-Escaut, I.* **224**, 284

Supply of fractionated gases to the corona

*von Steiger, R., Geiss, J.* **225**, 222

A potential diagnostic for low energy, nonthermal protons in solar flares

*MacKinnon, A.L.* **226**, 284

### Sun (the): general

Solar oscillations as seen in the Na I and K I absorption lines

*Isaak, G.R., McLeod, C.P., Pallé, P.L., van der Raay, H.B., Roca Cortés, T.* **208**, 297

Observations of the Sun at the CERGA Astrolabe in 1986

*Laclare, F., Journet, A.* **213**, 522; **77**, 131

Observations of solar p-modes with  $l \leq 5$

*Pallé, P.L., Pérez Hernández, F., Roca Cortés, T., Isaak, G.R.* **216**, 253

Multi-spectral analysis of total solar irradiance variations

*Fröhlich, C., Pap, J.* **220**, 272

Solar photospheric abundance of scandium and vanadium deduced from their ions

*Youssef, N.H., Amer, M.A.* **220**, 281

The variation of the cell size and velocities of the supergranulation with heliographic latitude

*Rimmele, T., Schröter, E.H.* **221**, 137

Solar cycle induced variations of the low  $l$  solar acoustic spectrum

*Pallé, P.L., Régulo, C., Roca Cortés, T.* **224**, 253

### Sun (the): granulation

Solar oscillations as seen in the Na I and K I absorption lines

*Isaak, G.R., McLeod, C.P., Pallé, P.L., van der Raay, H.B., Roca Cortés, T.* **208**, 297

The behaviour of asymmetry and other profile parameters of the Fe I  $\lambda$  5576.1 Å line in solar regions of varying magnetic activity

*Immerschitt, S., Schröter, E.H.* **208**, 307

A numerical simulation study of solar granular convection in cells of different horizontal dimension

*Steffen, M., Ludwig, H.-G., Krüß, A.* **213**, 371

Dynamics of the solar atmosphere. I. Spatio-temporal analysis of waves in the quiet solar atmosphere

*Deubner, F.-L., Fleck, B.* **213**, 423

Observations of solar p-modes with  $l \leq 5$

*Pallé, P.L., Pérez Hernández, F., Roca Cortés, T., Isaak, G.R.* **216**, 253

Mesogranulation: a convective phenomenon

*Deubner, F.-L.* **216**, 259

Speckle interferometric study of the solar granulation from centre to limb

*Druesne, P., Borgnino, J., Martin, F., Ricort, G., Aime, C.* **217**, 229

Sun (the): interior; see Sun (the): structure of

### Sun (the): magnetic fields

Interaction between a line current and a two-dimensional constant- $\alpha$  force-free field: an analytical model for quiescent prominences

*Amari, T., Aly, J.J.* **208**, 261

The decrease of penumbral velocity and magnetic field at the outer sunspot boundary

*Wiehr, E., Balthasar, H.* **208**, 303

The behaviour of asymmetry and other profile parameters of the Fe I  $\lambda$  5576.1 Å line in solar regions of varying magnetic activity

*Immerschitt, S., Schröter, E.H.* **208**, 307

Overstability of magnetic flux tubes in the Eddington approximation

*Massaglia, S., Bodo, G., Rossi, P.* **209**, 399

Differential rotation of the Sun's magnetic field pattern

*Stenflo, J.O.* **210**, 403

Dynamics of magnetic flux concentrations: the second-order thin flux tube approximation

*Ferriz-Mas, A., Schüssler, M., Anton, V.* **210**, 425

The magnetic field around quiescent solar prominences computed from observational boundary conditions

*Démoulin, P., Malherbe, J.M., Priest, E.R.* **211**, 428

A parametric survey of model solar fluxtubes

*Steiner, O., Pizzo, V.J.* **211**, 447

The internal magnetic field distribution and the diameters of solar magnetic elements

*Zayer, I., Solanki, S.K., Stenflo, J.O.* **211**, 463

Dynamics of a filament at the boundary of a spot region with magnetic shear

*Schmieder, B., Raadu, M.A., Démoulin, P., Dere, K.P.* **213**, 402

The stability of nonlinear dynamos and the limited role of kinematic growth rates

*Brandenburg, A., Krause, F., Meinel, R., Moss, D., Tuominen, I.* **213**, 411

Turbulent transport of magnetic fields. IV. Damping of the mean field  $\langle B \rangle$  in  $\alpha^2$ -dynamos with  $\alpha \propto \cos \theta$

*van Geffen, J.H.G.M., Hoyng, P.* **213**, 429

A twisted flux model for solar prominences. II. Formation of a dip in a magnetic structure before the formation of a solar prominence

*Démoulin, P., Priest, E.R.* **214**, 360

Determination of constant- $\alpha$  force-free magnetic fields above the photosphere using three-component boundary conditions

*Cuperman, S., Ofman, L., Semel, M.* **216**, 265

The generation of MHD waves by forced turbulence in a weakly magnetized fluid

*Rosner, R., Musielak, Z.E.* **219**, L27

A three-dimensional model for solar prominences

*Démoulin, P., Priest, E.R., Anzer, U.* **221**, 326

Stokes  $V$  asymmetry and shift of spectral lines

*Grossmann-Doerth, U., Schüssler, M., Solanki, S.K.* **221**, 338

Current sheet as a diagnostic for the subphotospheric structure of a spot

*Jahn, K.* **222**, 264

Stationary siphon flows in thin magnetic flux tubes

*Degenhardt, D.* **222**, 297

On the generation of the net circular polarization observed in solar faculae

*Sánchez-Almeida, J., Collados, M., del Toro Iniesta, J.C.* **222**, 311

Polarimetry of solar-type stars and magnetic field diagnostics

*Leroy, J.L., Le Borgne, J.F.* **223**, 336

Non-linear dynamos. I. One-dimensional model of a thin layer dynamo

*Schmitt, D., Schüssler, M.* **223**, 343

The origin and the diagnostic capabilities of the Stokes  $V$  asymmetry observed in solar faculae and the network

*Solanki, S.K.* **224**, 225

Solar cycle induced variations of the low  $l$  solar acoustic spectrum

*Pallé, P.L., Régulo, C., Roca Cortés, T.* **224**, 253

A generalization of the Woltjer minimum-energy principle

*Dixon, A.M., Berger, M.A., Browning, P.K., Priest, E.R.* **225**, 156

A semi-empirical model of sunspot penumbra

*Ding, M.D., Fang, C.* **225**, 204

Velocity and magnetic field fluctuations in penumbral fine-structures

*Wiehr, E., Stellmacher, G.* **225**, 528

### Sun (the): oscillations of

Oscillations of the Sun's chromosphere. V. Importance of network dynamics for chromospheric heating

*von Uexküll, M., Kneer, F., Malherbe, J.M., Mein, P.* **208**, 290

Solar oscillations as seen in the Na I and K I absorption lines

*Isaak, G.R., McLeod, C.P., Pallé, P.L., van der Raay, H.B., Roca Cortés, T.* **208**, 297

- Dynamics of the solar atmosphere. I. Spatio-temporal analysis of waves in the quiet solar atmosphere  
*Deubner, F.-L., Fleck, B.* **213**, 423
- Observations of solar p-modes with  $l \leq 5$   
*Pallé, P.L., Pérez Hernández, F., Roca Cortés, T., Isaak, G.R.* **216**, 253
- Resonant absorption of magnetogravity waves in an isothermal atmosphere permeated by a nearly horizontal magnetic field in the presence of radiative exchange  
*Zhukov, V.I.* **222**, 293
- Optimization of parameters for helioseismology experiments measuring solar radial velocities  
*Appourchaux, T.* **222**, 361
- Dynamics of the solar atmosphere. II. Standing waves in the solar chromosphere  
*Fleck, B., Deubner, F.-L.* **224**, 245
- Solar cycle induced variations of the low  $l$  solar acoustic spectrum  
*Pallé, P.L., Régulo, C., Roca Cortés, T.* **224**, 253
- The  $D_{\text{el}}$  values and the structure of the solar core  
*Gabriel, M.* **226**, 278
- Sun (the): photosphere of**
- An improved solar lead abundance  
*Youssef, N.H., Khalil, N.M.* **208**, 271
- Accurate solar photospheric abundances: a comparison with meteorite data  
*Booth, A.J.* **208**, 287
- Solar oscillations as seen in the Na I and K I absorption lines  
*Isaak, G.R., McLeod, C.P., Pallé, P.L., van der Raay, H.B., Roca Cortés, T.* **208**, 297
- The behaviour of asymmetry and other profile parameters of the Fe I  $\lambda 5576.1$  Å line in solar regions of varying magnetic activity  
*Immerschmitt, S., Schröter, E.H.* **208**, 307
- Lifetimes and transition probabilities in V II and the solar abundance of vanadium  
*Biémont, E., Grevesse, N., Faires, L.M., Marsden, G., Lawler, J.E., Whaling, W.* **209**, 391
- A parametric survey of model solar fluxtubes  
*Steiner, O., Pizzo, V.J.* **211**, 447
- Dynamics of the solar atmosphere. I. Spatio-temporal analysis of waves in the quiet solar atmosphere  
*Deubner, F.-L., Fleck, B.* **213**, 423
- Oscillator strengths from the solar spectrum  
*Thévenin, F.* **213**, 522; 77, 137
- Photospheric abundance of samarium deduced from two new ionic lines  
*Youssef, N.H., Khalil, N.M.* **215**, 165
- Determination of solenoidal horizontal velocities in solar active regions  
*Berton, R.* **215**, 168
- Observations of solar p-modes with  $l \leq 5$   
*Pallé, P.L., Pérez Hernández, F., Roca Cortés, T., Isaak, G.R.* **216**, 253
- Mesogranulation: a convective phenomenon  
*Deubner, F.-L.* **216**, 259
- Speckle interferometric study of the solar granulation from centre to limb  
*Druesne, P., Borgnino, J., Martin, F., Ricort, G., Aime, C.* **217**, 229
- Solar equatorial plasma rotation from 1983 until 1986  
*Lustig, G., Wöhl, H.* **218**, 299
- Multi-spectral analysis of total solar irradiance variations  
*Fröhlich, C., Pap, J.* **220**, 272
- Solar photospheric abundance of scandium and vanadium deduced from their ions  
*Youssef, N.H., Amer, M.A.* **220**, 281
- The height dependence of vertical and horizontal velocities attributed to the convective overshoot in the solar atmosphere  
*Nesis, A., Mattig, W.* **221**, 130
- The variation of the cell size and velocities of the supergranulation with heliographic latitude  
*Rimmele, T., Schröter, E.H.* **221**, 137
- Stationary siphon flows in thin magnetic flux tubes  
*Degenhardt, D.* **222**, 297
- The origin and the diagnostic capabilities of the Stokes  $V$  asymmetry observed in solar faculae and the network  
*Solanki, S.K.* **224**, 225
- Sun (the): prominences**
- Interaction between a line current and a two-dimensional constant- $\alpha$  force-free field: an analytical model for quiescent prominences  
*Amari, T., Aly, J.J.* **208**, 261
- Role of rigid rotation in the sudden disappearance of solar filaments  
*Mouradian, Z., Soru-Escut, I.* **210**, 410
- Linear polarization of the hydrogen H $\alpha$  line in filaments. I. Theoretical investigation  
*Bommier, V., Landi Degl'Innocenti, E., Sahal-Bréchet, S.* **211**, 230
- The magnetic field around quiescent solar prominences computed from observational boundary conditions  
*Démoulin, P., Malherbe, J.M., Priest, E.R.* **211**, 428
- Dynamics of a filament at the boundary of a spot region with magnetic shear  
*Schmieder, B., Raadu, M.A., Démoulin, P., Dere, K.P.* **213**, 402
- A twisted flux model for solar prominences. II. Formation of a dip in a magnetic structure before the formation of a solar prominence  
*Démoulin, P., Priest, E.R.* **214**, 360
- A three-dimensional model for solar prominences  
*Démoulin, P., Priest, E.R., Anzer, U.* **221**, 326
- Model for the fibril structure of solar prominences  
*Ballester, J.L., Priest, E.R.* **225**, 213
- Sun (the): radio radiation of**
- Langmuir wave generation by thick target electron beams in solar flares: the effects of density variations and reverse currents  
*McClements, K.G.* **208**, 279
- Type III radio bursts in a fibrous corona  
*Roelof, E.C., Pick, M.* **210**, 417
- Characteristics of type III bursts in the solar wind from simultaneous observations on board ISEE-3 and Voyager  
*Lecacheux, A., Steinberg, J.-L., Hoang, S., Dulk, G.A.* **217**, 237
- Model interpretation of type III radio burst characteristics. II. Temporal aspects  
*Reiner, M.J., Stone, R.G.* **217**, 251
- Sun (the): rotation of**
- Differential rotation of the Sun's magnetic field pattern  
*Stenflo, J.O.* **210**, 403

Role of rigid rotation in the sudden disappearance of solar filaments

*Mouradian, Z., Soru-Escaut, I.* **210**, 410

The internal rotation of the Sun

*Tassoul, J.-L., Tassoul, M.* **213**, 397

Solar differential rotation as a multiparameter turbulence problem

*Tuominen, I., Rüdiger, G.* **217**, 217

Solar equatorial plasma rotation from 1983 until 1986

*Lustig, G., Wöhl, H.* **218**, 299

The solar rotation 1883 until 1893 as inferred from the Greenwich photoheliographic results and observations published by G. Spörer

*Wöhl, H., Balthasar, H.* **219**, 313

The variation of the cell size and velocities of the supergranulation with heliographic latitude

*Rimmele, T., Schröter, E.H.* **221**, 137

**Sun (the): solar-terrestrial relations;** see also Interplanetary medium

Short-term cosmic-ray increases and magnetic cloud-like structures during Forbush decreases

*Iucci, N., Parisi, M., Signorini, C., Storini, M., Villosesi, G.* **226**, 421; **81**, 367

**Sun (the): solar wind;** see also Interplanetary medium

Solar wind control of Jupiter's hectometric radio emission

*Barrow, C.H., Desch, M.D.* **213**, 495

Model interpretation of type III radio burst characteristics. II. Temporal aspects

*Reiner, M.J., Stone, R.G.* **217**, 251

A 120-day oscillation in the solar activity and geophysical phenomena

*Djurovic, D., Pâquet, P.* **218**, 302

Electric antennae in the outer heliosphere: the importance of being stable

*Meyer-Vernet, N.* **224**, L5

Supply of fractionated gases to the corona

*von Steiger, R., Geiss, J.* **225**, 222

Time-dependent corona models: coronae with accretion

*Korevaar, P.* **226**, 209

Jovian hectometric radiation: beaming, source extension, and solar wind control

*Ladreitner, H.P., Leblanc, Y.* **226**, 297

**Sun (the): structure of**

Differential rotation of the Sun's magnetic field pattern

*Stenflo, J.O.* **210**, 403

Non-baryonic matter from the halo and the solar neutrino problem

*Finzi, A., Harpaz, A.* **211**, 441

The internal rotation of the Sun

*Tassoul, J.-L., Tassoul, M.* **213**, 397

Life and death of cosmions in stars

*Bouquet, A., Salati, P.* **217**, 270

Weakly interacting massive particles and stellar structure

*Bouquet, A., Kaplan, J., Martin, F.* **222**, 103

Solar cycle induced variations of the low  $l$  solar acoustic spectrum

*Pallé, P.L., Régulo, C., Roca Cortés, T.* **224**, 253

The  $D_{\text{el}}$  values and the structure of the solar core

*Gabriel, M.* **226**, 278

**Sun (the): sunspots**

The decrease of penumbral velocity and magnetic field at the outer sunspot boundary

*Wiehr, E., Balthasar, H.* **208**, 303

Determination of solenoidal horizontal velocities in solar active regions

*Berton, R.* **215**, 168

A 120-day oscillation in the solar activity and geophysical phenomena

*Djurovic, D., Pâquet, P.* **218**, 302

The solar rotation 1883 until 1893 as inferred from the Greenwich photoheliographic results and observations published by G. Spörer

*Wöhl, H., Balthasar, H.* **219**, 313

Multi-spectral analysis of total solar irradiance variations

*Fröhlich, C., Pap, J.* **220**, 272

Current sheet as a diagnostic for the subphotospheric structure of a spot

*Jahn, K.* **222**, 264

A semi-empirical model of sunspot penumbra

*Ding, M.D., Fang, C.* **225**, 204

Velocity and magnetic field fluctuations in penumbral fine-structures

*Wiehr, E., Stellmacher, G.* **225**, 528

**Sun (the): X-rays**

Langmuir wave generation by thick target electron beams in solar flares: the effects of density variations and reverse currents

*McClements, K.G.* **208**, 279

Relative timing of solar prompt  $\gamma$ -ray line and X-ray emission expected from a trap plus precipitation model for protons and electrons

*Hulot, E., Vilmer, N., Trotter, G.* **213**, 383

A relation between Balmer and soft X-ray emission in flares

*Haisch, B.M.* **219**, 317

Stochastic acceleration of solar protons in the transrelativistic region

*Steinacker, J., Schlickeiser, R.* **224**, 259

Comparison of H $\alpha$  absorbing features with soft X-ray images at the onset of solar flares

*Mouradian, Z., Martres, M.-J., Soru-Escaut, I., Simnett, G.M.* **224**, 267

Simultaneous rapid X-ray and optical intensity fluctuations from a small part of a flaring active region

*Simnett, G.M., Mouradian, Z., Martres, M.-J., Soru-Escaut, I.* **224**, 284

**Supernovae and supernova remnants: general**

Implications of the millimeter emission from Supernova 1987 A

*Salvati, M., Pacini, F., Oliva, E., Bandiera, R.* **208**, L5

Radiative transfer in supernova-like envelopes: curvature and diffusion effects

*Simonneau, E., Isern, J., López, R.* **208**, 166

Anisotropic neutrino emission from rotating protoneutron stars

*Janka, H.-T., Mönchmeyer, R.* **209**, L5

The coalescence of white dwarfs and type I supernovae

*Mochkovitch, R., Livio, M.* **209**, 111

Infrared emission from the sub-arcsecond vicinity of SN 1987 A

*Chalabaev, A.A., Perrier, C., Mariotti, J.-M.* **210**, L1

Explosive nucleosynthesis in supernova 1978 A

*Hashimoto, M., Nomoto, K., Shigeyama, T.* **210**, L5



- A supernova at  $z=0.28$  and the rate of distant supernovae  
Hansen, L., Jørgensen, H.E., Nørgaard-Nielsen, H.U., Ellis, R.S., Couch, W.J. **211**, L9
- A model for radio emission from SN 1987 A  
Manchanda, R.K., Sood, R.K., Waldron, L. **211**, 353
- M82, the Galaxy, and the dependence of cosmic ray energy production on the supernova rate  
Völk, H.J., Klein, U., Wiebeleski, R. **213**, L12
- An atlas of calculated continuum energy distributions for supernovae of type II  
Hauschildt, P.H., Shaviv, G., Wehrse, R. **213**, 522; 77, 115
- Infrared spectroscopy of supernova remnants  
Oliva, E., Moorwood, A.F.M., Danziger, I.J. **214**, 307
- A study of the interstellar medium in line to NGC 5128 from high resolution observations of the supernova 1986G  
D'Odorico, S., di Serego Alighieri, S., Pettini, M., Magain, P., Nissen, P.E., Panagia, N. **215**, 21
- SNR expansion in a pre-existent cavity  
Ciotti, L., D'Ercole, A. **215**, 347
- Radiation from young SN II shells produced by cosmic rays accelerated in shock waves  
Berezinsky, V.S., Ptuskin, V.S. **215**, 399
- Einstein IPC observations of 6 new radio supernova remnants  
Leahy, D.A. **216**, 193
- The combined role of ionization and supernova explosions in the destruction of molecular clouds  
Yorke, H.W., Tenorio-Tagle, G., Bodenheimer, P., Różyczka, M. **216**, 207
- Supernovae in Markarian galaxies  
Turatto, M., Cappellaro, E., Petrosian, A.R. **217**, 79
- The correlation between radio and far-infrared emission for disk galaxies: a calorimeter theory  
Völk, H.J. **218**, 67
- The determination of the neutrino mass in neutrino astronomy  
Roos, M. **218**, 334
- The origin of flat radio spectra in shell-type supernova remnants  
Schlickeiser, R., Fürst, E. **219**, 192
- Monte Carlo simulations of neutrino in type II supernovae  
Janka, H.-T., Hillebrandt, W. **219**, 363; 78, 375
- The supernova 1984 A in NGC 4419  
Barbon, R., Iijima, T., Rosino, L. **220**, 83
- Absolute fluxes for Supernova 1987 A. II. Days 51 to 157  
Hanuschik, R.W., Thimm, G., Seidensticker, K.J. **220**, 153
- Mixing and fragmentation in supernova envelopes  
Müller, E., Hillebrandt, W., Orio, M., Höflich, P., Mönchmeyer, R., Fryxell, B.A. **220**, 167
- Blue supergiant supernova progenitors  
Langer, N., El Eid, M.F., Baraffe, I. **224**, L17
- Neutrino emission from type II supernovae: an analysis of the spectra  
Janka, H.-T., Hillebrandt, W. **224**, 49
- The radioactivity of SN 1987 A  
Lehoucq, R., Cassé, M., Cesarsky, C.J. **224**, 117
- Deprojection of anisotropic emission in transparent systems  
Kaastra, J.S. **224**, 338
- Dynamical Voronoi tessellation. I. The two-dimensional case  
Zaninetti, L. **224**, 345
- Infrared photometry and spectrophotometry of SN 1987 A. I. March to October 1987 observations  
Bouchet, P., Moneti, A., Slezak, E., Le Bertre, T., Manfroid, J. **224**, 367; 80, 379
- Observations at 90 and 142 GHz of nine extended galactic radio sources  
Salter, C.J., Emerson, D.T., Steppe, H., Thum, C. **225**, 167
- Simplified models for the evolution of supernova remnants including particle acceleration  
Drury, L.O'C., Markiewicz, W.J., Völk, H.J. **225**, 179
- Hydrostatic post bounce configurations of collapsed rotating iron cores: neutrino emission  
Janka, H.-T., Mönchmeyer, R. **226**, 69
- The Asiago Supernova Catalogue  
Barbon, R., Cappellaro, E., Turatto, M. **226**, 421; 81, 421
- Supernovae and supernova remnants: individual**
- Supernova 1987 A: envelope metallicity and the nature of the soft X-ray component  
Mastichiadis, A., Kylafis, N., Ventura, J. **208**, L11
- Cygnus Loop**
- Fabry-Perot observations of [FeX] and [FeXIV] in the Cygnus Loop  
Ballet, J., Caplan, J., Rothenflug, R., Dubreuil, D., Soutoul, A. **211**, 217
- The EXOSAT view of the north and east Cygnus Loop  
Ballet, J., Rothenflug, R. **218**, 277
- G 18.95-1.1**
- A study of the composite supernova remnant G 18.95-1.1  
Fürst, E., Hummel, E., Reich, W., Sofue Y., Sieber, W., Reif, K., Dettmar, R.-J. **209**, 361
- G 126.2+1.6**
- New radio observations of two supernova remnants in Cassiopeia: G 126.2+1.6 and G 127.1+0.5  
Joncas, G., Roger, R.S., Dewdney, P.E. **219**, 303
- G 127.1+0.5**
- New radio observations of two supernova remnants in Cassiopeia: G 126.2+1.6 and G 127.1+0.5  
Joncas, G., Roger, R.S., Dewdney, P.E. **219**, 303
- G 179.0+2.7**
- The nature of the central source of the supernova remnant G 179.0+2.7  
Fürst, E., Reich, W., Kühr, H., Stickel, M. **223**, 66
- SN 1979 C**
- Theoretical models for the continuum and colors of SN 1979 C and SN 1980 K  
Hauschildt, P.H., Shaviv, G., Wehrse, R. **210**, 262
- SN 1980 K**
- Theoretical models for the continuum and colors of SN 1979 C and SN 1980 K  
Hauschildt, P.H., Shaviv, G., Wehrse, R. **210**, 262
- SN 1982 W**
- Photographic and spectroscopic observations of three type Ia supernovae: 1982W, 1983R, and 1983U  
Barbon, R., Ciatti, F., Iijima, T., Rosino, L. **214**, 131; ,
- SN 1983 R**
- Photographic and spectroscopic observations of three type Ia supernovae: 1982W, 1983R, and 1983U  
Barbon, R., Ciatti, F., Iijima, T., Rosino, L. **214**, 131; ,

**SN 1983 U**

Photographic and spectroscopic observations of three type Ia supernovae: 1982W, 1983R, and 1983U

*Barbon, R., Ciatti, F., Iijima, T., Rosino, L.* **214**, 131

**SN 1984 A**

The supernova 1984 A in NGC 4419

*Barbon, R., Iijima, T., Rosino, L.* **220**, 83

**SN 1987 A**

A model for radio emission from SN 1987 A

*Manchanda, R.K., Sood, R.K., Waldron, L.* **211**, 353

The Geneva photometric monitoring of SN 1987 A

*Burki, G., Cramer, N., Burnet, M., Rufener, F., Pernier, B., Richard, C.* **213**, L26

The galactic foreground reddening of SN 1987 A

*Gochermann, J., Goudfrooij, P., Schmidt-Kaler, Th.* **213**, 333

The modified correlation mass method for detecting neutrino mass from astrophysical neutrino bursts

*Chan, K.L., Chiu, H.-Y., Kondo, Y.* **215**, 387

Observations of nebular emission lines towards SN 1987 A

*Wampler, E.J., Richichi, A.* **217**, 31

Arcs around SN 1987 A

*Katz, J.I.* **218**, 289

The determination of the neutrino mass in neutrino astronomy

*Roos, M.* **218**, 334

A common envelope model for SN 1987 A

*Hillebrandt, W., Meyer, F.* **219**, L3

Absolute fluxes for Supernova 1987 A. II. Days 51 to 157

*Hanuschik, R.W., Thimm, G., Seidensticker, K.J.* **220**, 153

The spectrograms of Sanduleak -69°202, precursor to Supernova 1987 A in the Large Magellanic Cloud

*Walborn, N.R., Prévot, M.-L., Prévot, L., Wamsteker, W., González, R., Gilmozzi, R., Fitzpatrick, E.L.* **219**, 229

Blue supergiant supernova progenitors

*Langer, N., El Eid, M.F., Baraffe, I.* **224**, L17

Neutrino emission from type II supernovae: an analysis of the spectra

*Janka, H.-T., Hillebrandt, W.* **224**, 49

The radioactivity of SN 1987 A

*Lehoucq, R., Cassé, M., Cesarsky, C.J.* **224**, 117

Infrared photometry and spectrophotometry of SN 1987 A. I. March to October 1987 observations

*Bouchet, P., Moneti, A., Slezak, E., Le Bertre, T., Manfroid, J.* **224**, 367; **80**, 379

**SNR N 186 D**

Scanning interferometer observations of the SNR N 186 D in the Large Magellanic Cloud

*Laval, A., Rosado, M., Boulesteix, J., Georgelin, Y.P., Marcellin, M., Monnet, G., Le Coarer, E.* **208**, 230

**SS 433**

SS 433 - the puzzle continues

*Brinkmann, W., Kawai, N., Matsuoka, M.* **218**, L13

**Tycho SN**

Non-equilibrium ionisation in supernova remnants: the case of Tycho

*Brinkmann, W., Fink, H.H., Smith, A., Haberl, F.* **221**, 385; ,

**Surveys**

Radio surveys and source counts at 408 MHz and 1420 MHz towards the Abell 1314 cluster of galaxies

*Vallée, J.P., Roger, R.S.* **213**, 520; **77**, 31

The group environment of Seyfert galaxies. II. Spectrophotometry of galaxies in groups

*Fricke, K.J., Kollatschny, W.* **213**, 521; **77**, 75

Photographic UVB photometry to  $V \sim 21$  in the Puppis window

*Cameron Reed, B.* **217**, 393; **77**, 447

The DRAO Galactic plane survey. I.  $l = 140^\circ$ ,  $b = 0^\circ$

*Green, D.A.* **218**, 343; **78**, 277

The group environment of Seyfert galaxies. I

*Kollatschny, W., Fricke, K.J.* **219**, 34

A survey of several southern high-velocity complexes

*Bajaja, E., Cappa de Nicolau, C.E., Martin, M.C., Morras, R., Olano, C.A., Pöppel, W.G.L.* **219**, 363; **78**, 345

The 1977 Palomar-Leiden Trojan Survey

*van Houten-Groeneveld, I., van Houten, C.J., Wisse-Schouten, M., Bardwell, C., Gehrels, T.* **224**, 299

IRAS sources beyond the solar circle. I. CO observations

*Wouterloot, J.G.A., Brand, J.* **224**, 362; **80**, 149

**Synchrotron radiation**; see Radiation mechanisms

**Transition probabilities**; see Atomic and molecular data

**Turbulence**

The stability of isotropic distribution functions of relativistic electrons. II. Oblique propagating Langmuir waves in an electron-proton plasma

*Lesch, H., Crusius, A., Schlickeiser, R.* **209**, 427

Determination of the level of the MHD turbulence in 4C 21.44

*Roland, J., Rhee, G.F.R.N.* **213**, 10

Turbulent transport of magnetic fields. IV. Damping of the mean field  $\langle B \rangle$  in  $\alpha^2$ -dynamoes with  $\alpha \propto \cos \theta$

*van Geffen, J.H.G.M., Hoyng, P.* **213**, 429

**Erratum**: A multi-line  $\text{NH}_3$  study of the M 17SW molecular cloud

*Güsten, R., Fiebig, D.* **215**, 218

Mass loss rate and atmospheric turbulence of the B2 hypergiant HD 80077

*Carpay, J., de Jager, C., Nieuwenhuijzen, H., Moffat, A.* **216**, 143

AMLT: anisotropic mixing length theory

*Canuto, V.M.* **217**, 333

The generation of MHD waves by forced turbulence in a weakly magnetized fluid

*Rosner, R., Musielak, Z.E.* **219**, L27

The winds of O-stars. II. The terminal velocities of stellar winds of O-type stars

*Groenewegen, M.A.T., Lamers, H.J.G.L.M., Pauldrach, A.W.A.* **221**, 78

Turbulent scattering of high-frequency radiation in accretion discs

*Xiao-qing Li* **225**, 555

**UV radiation**; see also under the different objects

Studies of symbiotic stars. I. Location of the UV emitting regions in 6 S-type systems monitored by the IUE satellite

*Munari, U.* **208**, 63

- A comparison of solar and stellar ultraviolet spectra obtained with SKYLAB and IUE  
*Cappelli, A., Cerruti-Sola, M., Cheng, C.C., Pallavicini, R.* **213**, 226
- Carbon abundance in the primaries of six Algol-type stars  
*Cugier, H.* **214**, 168
- The region of formation of the ultraviolet high temperature resonance lines in the eclipsing binary  $\beta$  Persei (Algol)  
*Brandi, E., Garcia, L.G., Kondo, Y., Sahade, J.* **215**, 331
- Ultraviolet P-Cygni profile variations in HD 50896  
*Willis, A.J., Howarth, I.D., Smith, L.J., Garmany, C.D., Conti, P.S.* **215**, 410; **77**, 269
- Element identifications in IUE spectra of chemically peculiar stars: the Pt-Au-Hg sequence  
*Fuhrmann, K.* **217**, 391; **77**, 345
- The luminous quasar HS 1700+6416 and the shape of the "big bump" below 500 Å  
*Reimers, D., Clavel, J., Groote, D., Engels, D., Hagen, H.J., Naylor, T., Wamsteker, W., Hopp, U.* **218**, 71
- Large-scale aspects of current star formation in the disk of Messier 81  
*Buat, V.* **220**, 49
- IUE-ULDA/USSP: the on-line resolution spectral data archive of the International Ultraviolet Explorer  
*Wamsteker, W., Driessen, C., Munoz, J.R., Hassall, B.J.M., Pasian, F., Barylak, M., Russo, G., Egret, D., Murray, J., Talavera, A., Heck, A.* **220**, 341; **79**, 1
- Evolution of extreme horizontal branch stars  
*Caloi, V.* **221**, 27
- The winds of O-stars. II. The terminal velocities of stellar winds of O-type stars  
*Groenewegen, M.A.T., Lamers, H.J.G.L.M., Pauldrach, A.W.A.* **221**, 78
- Oscillator strength measurements in the vacuum-ultraviolet. IV. Weak lines of neutral carbon  
*Goldbach, C., Martin, M., Nollez, G.* **221**, 155
- Star formation rate and gas surface density in late-type galaxies  
*Buat, V., Deharveng, J.M., Donas, J.* **223**, 42
- Rotational modulation and flares on RS Canum Venaticorum and BY Draconis stars. XIII. IUE spectroscopy and photometry of II Pegasi during September 1986  
*Doyle, J.G., Butler, C.J., Byrne, P.B., Rodonò, M., Swank, J., Fowles, W.* **223**, 219
- The winds of O-stars. I. An analysis of the UV line profiles with the SEI method  
*Groenewegen, M.A.T., Lamers, H.J.G.L.M.* **223**, 378; **79**, 359
- The IUE spectral atlas of two normal B stars:  $\pi$  Ceti and  $\nu$  Capricorni (125-198 nm)  
*Arttu, M.-C., Borsenberger, J., Lanz, T.* **223**, 381; **80**, 17
- Peculiar and normal early-type stars in the galactic halo  
*Conlon, E.S., Brown, P.J.F., Dufton, P.L., Keenan, F.P.* **224**, 65
- Heavy elements in the 2000-3000 Å range of four Ap stars  
*Faraggiana, R.* **224**, 162
- The IUE-UV spectrum of the CP2 star HR 465  
*Fuhrmann, K.* **224**, 367; **80**, 399
- A correlation between shape and (UV-V) color for early-type galaxies  
*Longo, G., Capaccioli, M., Bender, R., Busarello, G.* **225**, L17
- IUE observations of variability in the WN6 star HD 192163  
*St-Louis, N., Smith, L.J., Stevens, I.R., Willis, A.J., Garmany, C.D., Conti, P.S.* **226**, 249
- X-rays: binaries**
- Resumed spin-up in GX 1+4  
*Greenhill, J.G., Giles, A.B., Sharma, D.P., Dieters, S., Sood, R.K., Thomas, J.A., Waldron, L., Manchanda, R.K., Carli, R., Hammer, P., Kendziorra, E., Staubert, R., Bazzano, A., Ubertini, P., La Padula, C.* **208**, L1
- The evolution of low-mass close binary systems with a compact component. II. Systems captured by angular momentum losses  
*Pylyser, E.H.P., Savonije, G.J.* **208**, 52
- EXOSAT observations of the X-ray burst source 4U 1608-52  
*Penninx, W., Damen, E., Tan, J., Lewin, W.H.G., van Paradijs, J.* **208**, 146
- The relativistic "looks" of a neutron star  
*Nollert, H.-P., Ruder, H., Herold, H., Kraus, U.* **208**, 153
- Extended optical spectroscopy of the massive companion of 4U 1907+09  
*van Kerkwijk, M.H., van Oijen, J.G.J., van den Heuvel, E.P.J.* **209**, 173
- A combined radio and X-ray observation of Algol  
*van den Oord, G.H.J., Kuipers, J., White, N.E., van der Hulst, J.M., Culhane, J.L.* **209**, 296
- Optical studies of transient low-mass X-ray binaries in quiescence. I. Centaurus X-4: orbital period, light curve, spectrum and models for the system  
*Chevalier, C., Ilovaisky, S.A., van Paradijs, J., Pedersen, H., van der Klis, M.* **210**, 114
- Stability of accretion in low mass X-ray binaries  
*Schwarzenberg-Czerny, A.* **210**, 174
- PeV inverse Compton gamma rays from Cygnus X-3  
*Schlickeiser, R.* **213**, L23
- LMC X-2: an extragalactic bulge-type source  
*Bonnet-Bidaud, J.M., Motch, C., Beuermann, K., Pakull, M.W., Parmar, A.N., van der Klis, M.* **213**, 97
- The X-ray source in the core of 47 Tucanae  
*Aurière, M., Koch-Miramond, L., Ortolani, S.* **214**, 113
- The X-ray ephemeris of Cygnus X-3  
*van der Klis, M., Bonnet-Bidaud, J.M.* **214**, 203
- A precessing neutron star model for E 2259+586  
*Carlini, A., Treves, A.* **215**, 283
- Transient low-mass X-ray binaries in quiescence. II. CCD photometry and spectroscopy of 4U 2129+47  
*Chevalier, C., Ilovaisky, S.A., Motch, C., Pakull, M.W., Mouchet, M.* **217**, 108
- Are massive X-ray binaries runaway stars?  
*van Oijen, J.G.J.* **217**, 115
- SS 433 - the puzzle continues  
*Brinkmann, W., Kawai, N., Matsuoka, M.* **218**, L13
- The birthrates of galactic low mass binary radio pulsars and their progenitor systems  
*Coté, J., Pylyser, E.H.P.* **218**, 131
- Implications for the detection of ultra-high-energy gamma rays from Sco X-1  
*Mitra, A.K.* **219**, L1
- EXO 032957-2606.9: a new long-period probable AM Herculis binary  
*Beuermann, K., Thomas, H.C., Giommi, P., Tagliaferri, G., Schwöpe, A.D.* **219**, L7
- An X-ray and optical study of the low-mass X-ray source 4U 1556-605  
*Motch, C., Pakull, M.W., Mouchet, M., Beuermann, K.* **219**, 158

- The formation and detectability of Be + white dwarf systems  
Waters, L.B.F.M., Pols, O.R., Hogeveen, S.J., Coté, J., van den Heuvel, E.P.J. **220**, L1
- Can we expect a freely precessing neutron star in Her X-1?  
Bisnovatyi-Kogan, G.S., Mersov, G.A., Sheffer, E.K. **221**, L7
- X-ray absorption dips in low-mass X-ray binaries: an evidence for tidal feed back?  
Pandey, U.S. **221**, 62
- Inhomogeneous wind accretion: comparison between 3D and 2D computations  
Sawada, K., Matsuda, T., Anzer, U., Börner, G., Livio, M. **221**, 263
- EXOSAT observations of five luminous globular cluster X-ray sources  
Parmar, A.N., Stella, L., Giommi, P. **222**, 96
- Analysis of the optical light curve of the massive X-ray binary LMC X-4  
Heemskerk, M.H.M., van Paradijs, J. **223**, 154
- One-pole and two-pole X-ray emission in the AM Herculis binary BL Hydr  
Beuermann, K., Schwöpe, A.D. **223**, 179
- The relation between orbital and spin periods in massive X-ray binaries  
Waters, L.B.F.M., van Kerkwijk, M.H. **223**, 196
- X-ray light curves of Be/X-ray binaries  
Waters, L.B.F.M., de Martino, D., Habets, G.M.H.J., Taylor, A.R. **223**, 207
- Towards a self-consistent description of accretion columns. III. Radiation pattern and computer-generated pictures of the emission region  
Kraus, U., Herold, H., Maile, T., Nollert, H.-P., Rebetzky, A., Ruder, H., Wolf, K. **223**, 246
- Towards a self-consistent description of accretion columns. IV. Iterative scattering solution of radiative transfer and effects of bulk motion  
Maile, T., Bock, U., Herold, H., Rebetzky, A., Ruder, H., Ventura, J., Wolf, K. **223**, 251
- Spectral classification of low-mass X-ray binary (LMXB) energy spectra with color-color diagrams  
Schulz, N.S., Hasinger, G., Trümper, J. **225**, 48
- Two patterns of correlated X-ray timing and spectral behaviour in low-mass X-ray binaries  
Hasinger, G., van der Klis, M. **225**, 79
- Towards a self-consistent description of accretion columns. II. Frequency-dependent radiation hydrodynamics  
Rebetzky, A., Bock, U., Herold, H., Kraus, U., Maile, T., Nollert, H.-P., Ruder, H., Wolf, K. **225**, 137
- Turbulent scattering of high-frequency radiation in accretion discs  
Xiao-qing Li **225**, 555
- The number of evolved early-type close binaries in the Galaxy  
Meurs, E.J.A., van den Heuvel, E.P.J. **226**, 88
- An upper limit on the high-energy gamma-ray emission of Vela X-1  
Mattox, J.R., Ögelman, H., Kanbach, G. **226**, 145
- The X-ray spectrum of modified  $\alpha$ -viscosity accretion disks  
Nannarelli, M., Stella, L. **226**, 343
- X-rays: bursts**
- EXOSAT observations of the X-ray burst source 4U 1608-52  
Penninx, W., Damen, E., Tan, J., Lewin, W.H.G., van Paradijs, J. **208**, 146
- Broadening of iron resonance lines in X-ray burst spectra  
Madej, J. **209**, 226
- Coordinated observations of a large impulsive flare on UV Ceti  
de Jager, C., Heise, J., van Genderen, A.M., Foing, B.H., Ilyin, I.V., Kilkenny, D., Avgoloupis, S., Marvridis, L., Cutispoto, G., Rodonò, M., Seeds, M.A., Yuen K.Ng., van Driel, W., Rabattu, X., Zodi, A.M., Vilas Boas, J.W.S., Scalise, E., Schaal, R.E., Kaufmann, P., Waelkens, C. **211**, 157
- The strength of NiII-CIII complex emission in low-mass X-ray binaries as a possible indicator of metallicity  
Motch, C., Pakull, M.W. **214**, L1
- Spectral evolution of a burst from MXB 1728-34 and constraints on burst parameters  
Kaminker, A.D., Pavlov, G.G., Shibano, Y.A., Kurt, V.G., Smirnov, A.S., Shamolin, V.M., Kopaeva, I.F., Sheffer, E.K. **220**, 117
- Stochastic acceleration of solar protons in the transrelativistic region  
Steinacker, J., Schlickeiser, R. **224**, 259
- X-rays: general**
- Resumed spin-up in GX 1+4  
Greenhill, J.G., Giles, A.B., Sharma, D.P., Dieters, S., Sood, R.K., Thomas, J.A., Waldron, L., Manchanda, R.K., Carli, R., Hammer, P., Kendziorra, E., Staubert, R., Bazzano, A., Ubertini, P., La Padula, C. **208**, L1
- Supernova 1987 A: envelope metallicity and the nature of the soft X-ray component  
Mastichiadis, A., Kylafis, N., Ventura, J. **208**, L11
- Extended X-ray emission from hot gas around the normal giant elliptical galaxy NGC 5846  
Biermann, P.L., Kronberg, P.P., Schmutzler, T. **208**, 22
- Accurate position for the globular cluster X-ray source M15: AC211/X2127+119  
Geffert, M., Aurière, M., Illovaisky, S.A., Terzan, A. **209**, 423
- The high excitation extended gas in NGC 1068: a probe to the central hidden absorbing torus  
Bergeron, J., Petitjean, P., Durret, F. **213**, 61
- The strength of NiII-CIII complex emission in low-mass X-ray binaries as a possible indicator of metallicity  
Motch, C., Pakull, M.W. **214**, L1
- Soft X-ray observations of the Vela pulsar PSR 0833-45  
Ögelmann, H., Zimmermann, H.-U. **214**, 179
- Einstein IPC observations of 6 new radio supernova remnants  
Leahy, D.A. **216**, 193
- A model for a non-Keplerian magnetic accretion disk with a magnetically heated corona  
Heyvaerts, J.F., Priest, E.R. **216**, 230
- X-ray and optical observations of LDS 587  
Pasquini, L., Schmitt, J.H.M.M., Harnden, F.R., Jr., Tozzi, G.P., Krautter, J. **218**, 187
- The EXOSAT view of the north and east Cygnus Loop  
Ballet, J., Rothenflug, R. **218**, 277
- Efficient computation of electron-electron bremsstrahlung emission in a hot thermal plasma  
Haug, E. **218**, 330
- Active galactic nuclei as accreting turbulent synchrotron-self-Compton sources  
Atoyan, A.M., Nahapetian, A. **219**, 53
- An X-ray and optical study of the low-mass X-ray source 4U 1556-605  
Motch, C., Pakull, M.W., Mouchet, M., Beuermann, K. **219**, 158



Magnetic structure in cool stars. XVI. Emissions from the outer atmospheres of M-type dwarfs

*Rutten, R.G.M., Schrijver, C.J., Zwaan, C., Duncan, D.K., Mewe, R.* **219**, 239

Variable X-ray emission from the dMe star EXO 040830-7134.7

*van der Woerd, H., Tagliaferri, G., Thomas, H.C., Beuermann, K.* **220**, 221

Electron-ion coupling in Compton-heated plasmas

*Schmutzler, T., Lesch, H.* **223**, 71

Active galactic nuclei and the spectrum of the X-ray background

*Setti, G., Woltjer, L.* **224**, L21

Soft and hard X-ray variability from the accretion disk of NGC 5548

*Kaastra, J.S., Barr, P.* **226**, 59

#### X-rays: spectroscopy

LMC X-2: an extragalactic bulge-type source

*Bonnet-Bidaud, J.M., Motch, C., Beuermann, K., Pakull, M.W., Parmar, A.N., van der Klis, M.* **213**, 97

The X-ray flare and the quiescent emission from Algol as detected by EXOSAT

*van den Oord, G.H.J., Mewe, R.* **213**, 245

Spectral evolution of a burst from MXB 1728-34 and constraints on burster parameters

*Kaminker, A.D., Pavlov, G.G., Shibano, Y.A., Kurt, V.G., Smirnov, A.S., Shamolin, V.M., Kopaeva, I.F., Sheffer, E.K.* **220**, 117

Non-equilibrium ionisation in supernova remnants: the case of Tycho

*Brinkmann, W., Fink, H.H., Smith, A., Haberl, F.* **221**, 385

Density diagnostic and inhomogeneous plasmas. I. Isothermal plasmas

*Almleaky, Y.M., Brown, J.C., Sweet, P.A.* **224**, 328

Spectral classification of low-mass X-ray binary (LMXB) energy spectra with color-color diagrams

*Schulz, N.S., Hasinger, G., Trümper, J.* **225**, 48

X-ray spectroscopy of RS CVn stars with EXOSAT

*Pasquini, L., Schmitt, J.H.M.M., Pallavicini, R.* **226**, 225

M

-

3

6

9

I

